

THE ROYAL  
**Almanack:**  
OR, A  
DIARY

OF THE  
True Places of the Sun, Moon, and Planets,  
their Rising, Southing, and Setting;

High water at *London-bridge*, with Rules to  
serve other Places after the *Peto Theory*  
of Tides, and Directions of

Sir JONAS MOORE.

To which are added,

The *Eclipses*, with a Table of Equations for  
the Regulating curious Pendulum-Clocks, and  
movements to the Sun.

A Table of the Sun's right Ascension in time for every  
day at Noon, and Thirty of the most notable fixed Stars.

With the Moon and other the Planets Appulies to  
the fixed Stars, for the Meridian of *London*, Anno 1667.  
and of his Majesties Happy Reign 29.

All done with great Pains, according to the Rules of  
Art, for his Majesties Use, and at his Command.

By N. Stephenson, one of his Majesties Gunners.

L O N D O N :

Printed by A.C. for the Company of Stationers, 1677.

# January hath xxxi. days.

Full Moon the 7. day, at 11 hours, 39 min. at night.  
 Last quarter the 17. day, at 1 hour, 21 min. in morning  
 New Moon the 23. day, at 5 hours, 33 min. in morning  
 First quarter the 30. day, at 1 hour, 39 min. after noon.

M.D	Festivals & Plan. Ris. Sou. and Set.	☉ Place	☽ Place	D Lat.	Full Sea Lond. Br.
1	a New-years d.	22 7 <sup>o</sup> 0	0 8 21	3 S 32	7 A 58
2	h sou. 7. 27 vesp	23 1 12	24 2	40	8 50
3	h sets 2. 47 ma	24 2 24	23 1	40	9 51
4	☿ latet sub	25 3 6	11 12	0 38	10 54
5	sole.	26 4 18	10 M 26	11 59	
6	f Twelfth-day	27 5 29	52 1	29 13	5
7	☉ 1 past Epiph.	28 6 11	54 2	29 0 M	5
8	h sou. 9. 43 vesp	29 7 23	47 3	22 1	54
9	☿ sets 6. 18 ma	0 8 5	59 4	6 2	5
10	☿ ri. 3. 1. 5 ma	1 9 18	52 4	41 3	0
11	☿ latet sub	2 10 0	49 5	0 3	40
12	f Solis radiis.	3 11 13	36 5	7 4	23
13		4 12 26	33 4	57 4	57
14	☉ 2 past Epiph.	5 13 9	42 4	32 5	33
15	a	6 14 23	33 3	53 6	7
16	h so. 6. 20 vesp	7 15 6	39 3	0 6	55
17	h sets 1. 48 ma	8 15 20	29 1	54 7	47
18	☿ so. 8. 59 vesp	9 16 4	39 0	41 8	52
19	☿ sets 5. 31 ma	10 17 19	5 0 S	36 10	6
20	☿ rise 5. 12 ma	11 18 3	46 1	52 11	28
21	☉ 3 past Epiph.	12 19 18	38 3	1 12	47
22	a	13 20 3	25 3	58 1 A	46
23	h Term begins	14 20 18	9 4	39 2	39
24	h so. 5. 57 vesp	15 21 2	37 4	59 3	25
25	Conv. St. Paul	16 22 16	43 5	2 4	40
26	h sets 1. 10 ma	17 23 0	23 4	48 5	8
27	☿ so. 7. 53 vesp	18 23 13	34 4	16 5	37
28	☉ 4 past Epiph.	19 24 26	19 3	35 6	7
29	☿ sets 5. 0 ma	20 24 8	43 2	43 6	41
30	h K. CHARLES M.	21 25 20	49 1	45 7	24
31	☿ rise 3. 27 ma	22 26 2	52 0	49 8	15

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	h	m	D. M.	V	m	D. M.	S	m	S	D. M.
1	19	2	2-13	1	21	0	28	29	R. 37	3 40
6	19	D.	5	11	2	32	29	28	22	38
11	19	9	8	3	43	29	27	25		35
16	19	12	7	4	15	29	26	50		31
21	19	16	6	6	6	30	26	34		25
26	19	20	5	7	17	30	26	D. 37		20
	Q	m	S	D. M.	V	m	D. M.	Eq	January, 1677.	
1	11	6	2--5	12	49	1-27	30			
2	12	18	3	14	25	31	30			
3	13	30	6	15	59	35	30			
4	14	42	1-58	17	36	40	30			
5	15	53	55	19	11	43	30			
6	17	5	53	20	47	47	30			
7	18	17	50	23	25	50	30			
8	19	29	47	24	2	53	30			
9	20	42	44	25	42	56	29			
10	21	54	42	27	21	58	29			
11	23	5	39	29	00	2--0	29			
12	24	18	36	0	40	1-29				
13	25	30	33	2	21	3	28			
14	26	43	30	4	3	3	28			
15	27	56	27	5	45	4	28			
16	29	8	24	7	28	4	26			
17	0	21	21	9	11	4	26			
18	1	34	18	10	54	3	25			
19	2	47	15	12	40	2	24			
20	3	59	11	14	26	0	24			
21	5	11	8	16	11	1-58	23			
22	6	24	5	17	58	55	22			
23	7	37	2	19	44	52	22			
24	8	41	0-59	21	31	48	21			
25	10	1	56	23	21	44	20			
26	11	14	52	25	9	39	20			
27	12	27	49	26	57	33	19			
28	13	40	46	28	46	27	18			
29	14	52	43	0	35	20	18			
30	16	5	39	2	23	12	16			
31	17	19	36	4	12	4	16			

February hath xxviii. days.

Full Moon the 7 day, at 4 hours 38 min. in the evening.  
 Last quarter the 14. day, at 10 hours, 18 min. in the evening.  
 New Moon the 21. day, at 5 hours, 23 min. in the evening.

M.D.	n.D.	Festivals & Plan. Ris. Sou. and Set.	☉ Place	☽ Place	D. Lat.	Full Sea Lond. B.
1	d	h fou. 5.27 vesp	23 26	14 II.30	0 M 18	9 7
2	e	Purif. Mary	24 27	26 18	1 20	10 10
3	f	h sets 0.47 ma	25 27	8 8	2 19	11 16
4	g	5 past Epiph.	26 28	20 7	3 12	12 23
5	a	♂ so. 7.33 vesp	27 28	2 16	3 56	0 M 23
6	b	♂ sets 4.23 ma	28 29	14 39	4 31	1 23
7	c	♀ rise 5.42 ma	29 29	27 17	4 53	2 19
8	d	♀ post paucos	0 X 29	10 III 8	5 0	3 7
9	e	dies emergit ex	1 30	23 13	4 53	3 49
10	f	radiis Solis.	2 30	6 32	4 29	4 23
11	g	Septuagesima	3 30	19 59	3 50	4 54
12	a	h sets 0.13 ma	4 31	3 35	2 57	5 27
13	b	Term ends	5 31	17 19	1 55	6 17
14	c	Valentine	6 31	1 7	0 45	6 44
15	d	♂ so. 7.21 vesp	7 31	15 9	0 S 30	7 36
16	e	♂ sets 3.53 ma	8 31	29 18	1 42	8 36
17	f	♀ rise 5.39 ma	9 31	13 35	2 50	9 48
18	g	Sexagesima	10 32	27 57	3 46	11 9
19	a		11 32	12 22	4 29	12 28
20	b	♀ sets 6.52 vesp	12 32	26 41	4 54	1 A 43
21	c	h sets 11.40 v.	13 32	10 X 48	5 0	2 48
22	d	X latet sub Sole	14 32	24 46	4 48	3 22
23	e	♂ sou. 7.3 vesp	15 32	8 18	4 20	4 6
24	f	St. Matthias	16 31	21 28	3 40	4 42
25	g	Shrove Sund	17 31	4 14	2 48	5 19
26	a	♂ sets 3.23 ma	18 31	16 38	1 51	5 48
27	b	♀ rise 5.37 ma	19 31	28 46	0 49	6 21
28	c	Cinerum	20 31	10 II 41	0 M 14	7 3

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	h in ♂	M	D.M.	h in ♀	M	D.M.	h in ♄	S	D.M.
1	19	30	2---4	8	42	0	31	27	5 3-12
6	19	49	2	9	52	32	27	47	6
11	20	8	1	14	1	33	28	45	2 59
16	20	27	59	12	10	33	29	52	53
21	20	46	58	13	17	33	1	514	47
26	21	00	57	14	24	34	2	44	41

	h in ♀	S	D.M.	h in ♀	M	D.M.	Eq	February, 1677
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1	18	32	0	33	5	59	0	55	15	
2	19	45	30	7	45	46	15			
3	20	58	26	9	29	36	14			
4	22	12	23	11	11	25	12			
5	23	25	20	12	52	13	12			
6	24	38	17	14	30	1	11			
7	25	52	14	16	3	S	12	10		
8	27	5	11	17	33	25	10			
9	28	18	7	18	59	38	9			
10	29	32	4	20	19	52	7			
11	0	44	1	21	32	1	7			
12	1	58	M	2	22	40	21	6		
13	3	11	5	23	40	36	6			
14	4	25	8	24	33	50	4			
15	5	38	11	25	17	2	4			
16	6	49	14	25	52	18	3			
17	8	4	17	26	17	31	2			
18	9	17	20	26	34	43	2			
19	10	31	23	26	41	54	0			
20	11	44	25	26R	38	5	*			
21	12	57	28	26	27	13	1			
22	14	11	31	26	6	21	2			
23	15	24	33	25	38	26	2			
24	16	36	36	25	1	30	4			
25	17	51	39	24	19	32	4			
26	19	4	41	23	31	32	5			
27	20	17	44	22	37	30	6			
28	21	31	46	21	40	26	6			

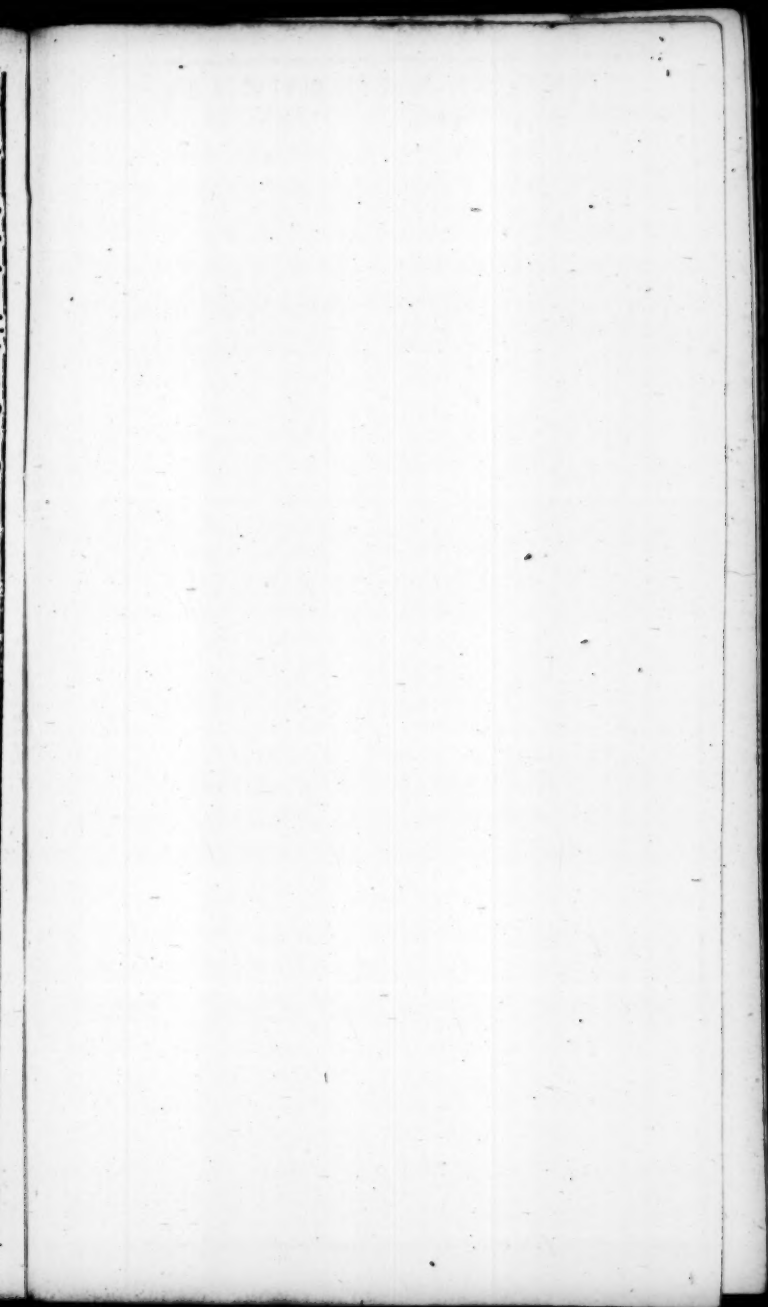
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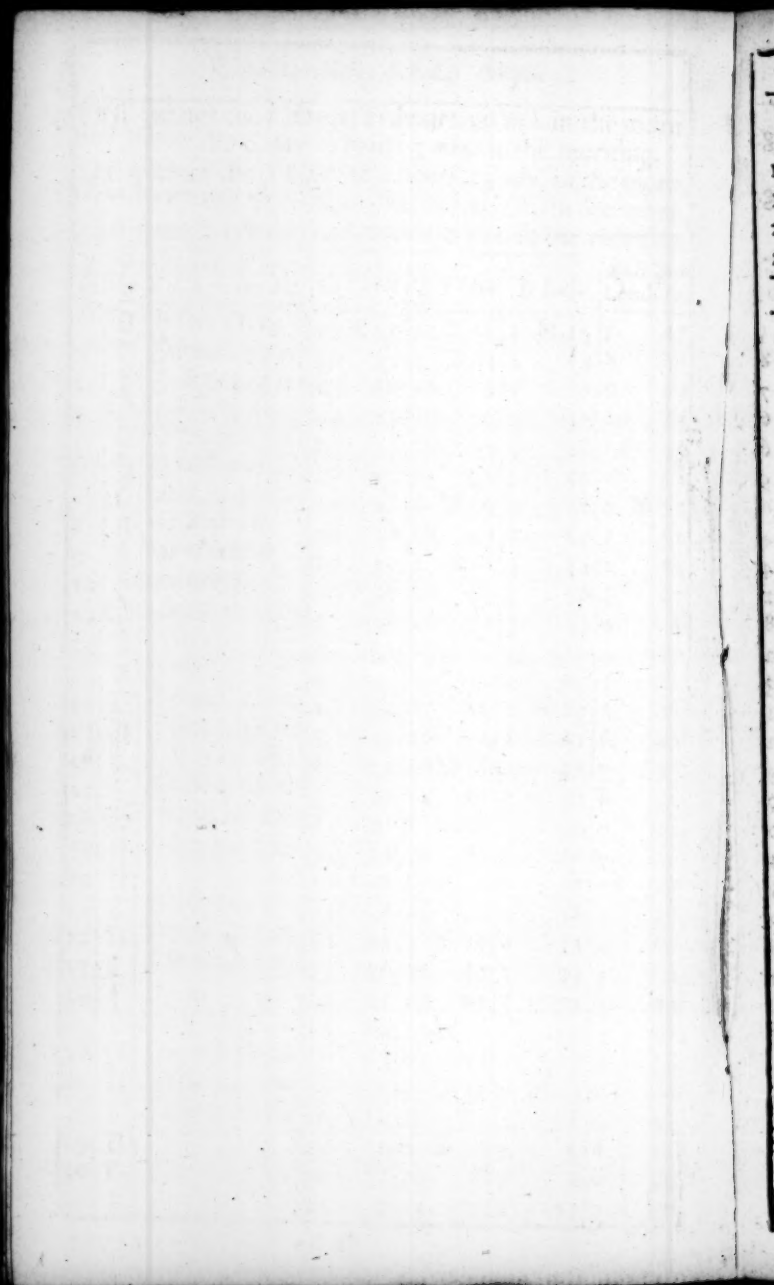
Subtract

March hath xxxi. days.

First quarter the 1. day, at 11. hours, 39 min. in the morn.  
 Full Moon the 9. day, 7 hours 3 min. in the morning.  
 Last quarter the 16. day, at 5 hours, 23 min. in the morn.  
 New Moon the 23. day, at 5 hours, 55 min. in the morn.  
 First quarter last day, at 6 hours, 2 min. in the morning.

M.D.	W.D.	Festivals & Plan. Ris. Sou. and Set.	☉ Place	☽ Place	☽ Lat.	Full Sea Lond. Br.
1	d	h sets 11.15 v	21 X 30	22 II 26	1 M 15	7 47
2	e	☿ sou. 6. 50 ves	22 30	4 ☽ 14	2 14	8 41
3	f	☿ sets 3. 4 ma	23 30	16 4	3 7	9 39
4	☿	Quadrages.	24 29	28 2	3 53	10 37
5	a	♀ latet, sub Sole	25 29	10 Ω 15	4 28	11 49
6	b	♀ rursum ocul-	26 29	22 45	4 52	12 51
7	c	tatur, at in Zo-	27 28	5 m 36	5 2	0 M 51
8	d	nis Australi-	28 28	18 44	4 57	1 52
9	e	bus videbitur	29 27	2 ☽ 11	4 34	2 44
10	f	clarissime.	0 V 26	15 52	3 56	3 27
11	☿	2 Sund. in Lent	1 26	29 31	3 3	4 8
12	a	h sets 10. 41 v	2 25	13 m 48	2 0	4 47
13	b	☿ rise 4. 25 ma	3 25	27 52	0 49	5 22
14	c	☿ sou. 6. 21 ves	4 24	11 59	0 S 27	5 58
15	d	☿ sets 2. 48 ma	5 23	26 4	1 41	6 41
16	e	h sets 10. 28 v	6 22	10 W 8	2 48	7 35
17	f	☿ rise 4. 14 ma	7 22	24 11	3 46	8 35
18	☿	3 Sund. in Lent	8 21	8 ☽ 15	4 30	9 45
19	a	☿ sets 2. 37 ma	9 20	22 12	4 56	11 0
20	b		10 19	6 X 4	5 5	12 16
21	c	h sets 10. 12 v	11 18	19 46	4 58	1 A 27
22	d	☿ rise 4. 3 ma	12 17	3 V 16	4 31	2 11
23	e	☿ sets 2. 29 ma	13 16	16 32	3 53	3 2
24	f		14 15	29 27	3 2	3 44
25	☿	Lady-Day	15 14	12 ☽ 7	2 0	4 27
26	a	h sets 9. 38 ve.	16 13	24 28	1 1	4 54
27	b	☿ rise 3. 47 ma	17 12	6 II 34	0 M 4	5 18
28	c	☿ rise 2. 12 ma	18 11	18 32	1 8	5 44
29	d		19 9	0 ☽ 30	2 9	6 10
30	e		20 18	12 8	3 4	6 39
31	f		21 7	23 57	3 51	7 46







	h	in	M	D.M.		h	in	M	D.M.		h	in	S	D.M.
1	21	17	1	56	15	2	0	35	3	44	2	38		
6	21	48		55	16	5		35	5	30		32		
11	22	19		54	17	7		36	7	24		26		
16	22	49		53	18	7		37	9	24		21		
21	23	20		52	19	5		38	11	31		16		
26	23	51		51	20	0		39	13	43		11		

	h	in	M	D.M.		h	in	S	D.M.	E.	March, 1677		
1	22	45	0	48	20	43	3	20	7				
2	23	58		51	19	46	12	8					
3	25	12		53	18	49	3	8					
4	26	25		55	17	51	2	52	9				
5	27	39		57	17	00	40	10					
6	28	53	1	0	16	11	27	10					
7	0	X 6		2	15	27	13	10					
8	1	20		4	14	48	1	58	11				
9	2	34		6	14	15	44	12					
10	3	47		7	13	47	29	12					
11	5	1		9	13	28	13	13					
12	6	14		11	13	14	0	58	14				
13	7	27		13	13	3	43	14					
14	8	41		14	12	58	28	14					
15	9	54		16	13	D. 1	14	15					
16	11	8		17	13	10	M. 0	16					
17	12	22		19	13	23	14	16					
18	13	35		20	13	41	27	16					
19	14	49		21	14	4	39	17					
20	16	3		22	14	31	51	17					
21	17	16		23	15	4	I--3	17					
22	18	30		25	15	40	14	17					
23	19	44		26	16	20	23	18					
24	20	57		27	17	3	33	18					
25	22	11		27	17	50	42	18					
26	23	24		28	18	42	50	18					
27	24	38		29	19	35	57	18					
28	25	52		30	20	32	2--4	18					
29	27	5		30	21	32	11	19					
30	28	19		31	22	35	17	19					
31	29	33		31	23	40	22	19					

April hath xxx. days.

Full Moon the 7.day, at 6 hours, 27 min. in the evening.  
 Last quarter the 14. day, 19 min. before noon.  
 New Moon the 21.day, at 7 hours, 45 min. in the evening.  
 First quarter the 29. day, 44 min. before noon.

M.D.	h.d.	Festivals & Plan. Ris. Sou. and Set.	☉ Place	☽ Place	D Lat.	Full Sea Lond. Br.
1	☾	5 Sund.in Lent	22 V	5 5 Ω 58	4 M 19	9 11
2	a	h sets 9.41 ves	23	4 18 10 4	55 10	8
3	b	☾ rise 3.20 ma	24	3 0 43 5	8 11	7
4	c	☽ sets 2.5 ma	25	1 13 34 5	7 12	6
5	d		26	0 26 51 4	49 0 M	6
6	e	♀ & ♀ latent	26	58 10 14 4	14 1	9
7	f	sub Sole.	27	57 24 14 3	23 2	16
8	☾	Palm-Sunday	28	55 8 m 26 2	19 3	14
9	a	h sets 9.16 ves	29	54 23 0 1	5 4	4
10	b	☾ rise 3.2 ma	0	52 7 7 28 0	5 15 4	42
11	c	☽ sets 1.52 ma	1	51 21 59 1	33 5	18
12	d		2	49 6 42 2	44 5	52
13	e	Good-Friday	3	47 20 58 3	46 6	33
14	f		4	46 5 3 4	32 7	21
15	☾	Easter day	5	44 18 55 5	2 8	22
16	a	h sets 8.45 ves	6	42 2 37 5	13 9	33
17	b	☾ rise 2.35 ma	7	40 16 3 5	7 10	30
18	c	☽ sets 1.34 ma	8	39 29 20 4	45 11	30
19	d		9	37 12 V 21 4	9 12	34
20	e		10	35 25 17 3	20 1 A	35
21	f		11	33 7 56 2	23 2	30
22	☾	Low Sunday	12	31 20 22 1	19 3	19
23	a	St. George	13	29 2 II 36 0	11 4	9
24	b		14	27 14 41 0 M	15 4	42
25	c	S.Mark Evan.	15	25 26 34 1	58 5	15
26	d	h sub Solis rad.	16	23 8 27 2	56 5	43
27	e	☾ rise 1.57 ma	17	21 20 15 3	46 6	13
28	f	☽ sets 1.13 ma	18	19 2 Ω 7 4	27 6	50
29	☾	Miserer. Dom.	19	17 14 6 4	57 7	33
30	a		20	15 26 17 5	12 8	24

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1. The first part of the book is devoted to a general  
introduction of the subject, and to a description of the  
materials used in the experiments.

2. The second part contains a description of the  
apparatus used in the experiments, and of the  
methods employed in the observations.

3. The third part is devoted to a description of the  
results of the experiments, and to a discussion of the  
theoretical principles involved.

4. The fourth part contains a description of the  
conclusions drawn from the experiments, and of the  
implications of the results.

5. The fifth part is devoted to a description of the  
conclusions drawn from the experiments, and of the  
implications of the results.

6. The sixth part contains a description of the  
conclusions drawn from the experiments, and of the  
implications of the results.

7. The seventh part is devoted to a description of the  
conclusions drawn from the experiments, and of the  
implications of the results.

8. The eighth part contains a description of the  
conclusions drawn from the experiments, and of the  
implications of the results.

9. The ninth part is devoted to a description of the  
conclusions drawn from the experiments, and of the  
implications of the results.

in $\delta$ M			D.M.			in $\gamma$ M			D.M.			in $\epsilon$ S			D.M.		
1	24	25	1	50	21	4	0	40	16	28	2	5	16	28	2	5	16
6	25	5	49	21	53	41	18	50	1	0	1	0	18	50	1	0	1
11	25	41	49	22	40	42	21	17	56	11	56	21	17	56	11	56	11
16	26	17	48	23	24	43	23	46	52	16	52	23	46	52	16	52	16
21	26	53	47	24	4	44	26	19	46	21	46	26	19	46	21	46	21
26	27	29	47	24	41	45	28	55	43	26	43	28	55	43	26	43	26
in $\gamma$ M			D.M.			in $\epsilon$ M			D.M.			Eq			April, 1677.		
1	0	46	13	1	24	47	2	27	19	1	19	2	27	19			
2	2	0	32	25	57	31	31	19	31	19	31	19	31	19			
3	3	14	32	27	10	34	34	19	34	19	34	19	34	19			
4	4	27	32	28	24	37	37	19	37	19	37	19	37	19			
5	5	41	32	29	41	39	39	19	39	19	39	19	39	19			
6	6	54	32	0	59	41	41	19	41	19	41	19	41	19			
7	8	18	32	2	20	42	42	19	42	19	42	19	42	19			
8	9	22	32	3	43	43	43	19	43	19	43	19	43	19			
9	10	35	32	5	7	44	44	19	44	19	44	19	44	19			
10	11	49	32	6	34	43	43	19	43	19	43	19	43	19			
11	13	1	32	8	1	42	42	19	42	19	42	19	42	19			
12	14	16	31	9	32	41	41	18	41	18	41	18	41	18			
13	15	30	30	11	4	39	39	18	39	18	39	18	39	18			
14	16	43	29	12	39	37	37	18	37	18	37	18	37	18			
15	17	57	29	14	14	34	34	18	34	18	34	18	34	18			
16	19	11	28	15	51	30	30	18	30	18	30	18	30	18			
17	20	25	27	17	31	26	26	18	26	18	26	18	26	18			
18	21	38	27	19	13	22	22	17	22	17	22	17	22	17			
19	22	52	26	20	55	17	17	17	17	17	17	17	17	17			
20	24	6	25	22	41	11	11	17	11	17	11	17	11	17			
21	25	19	25	24	28	5	5	16	5	16	5	16	5	16			
22	26	33	24	26	16	1	1	16	1	16	1	16	1	16			
23	27	46	23	28	7	52	52	16	52	16	52	16	52	16			
24	29	00	22	29	59	44	44	15	44	15	44	15	44	15			
25	0	14	20	1	54	36	36	15	36	15	36	15	36	15			
26	1	28	19	3	50	28	28	15	28	15	28	15	28	15			
27	2	41	18	5	48	20	20	14	20	14	20	14	20	14			
28	3	55	17	7	48	11	11	14	11	14	11	14	11	14			
29	5	8	15	9	50	1	1	14	1	14	1	14	1	14			
30	6	22	14	11	53	0	0	13	0	13	0	13	0	13			

Subtract

May hath xxxi. days.

Full Moon the 6. day, at 3 hours, 32 min. in the morning.  
 Last quarter the 13. day, at 6 hours, 22 min. afternoon.  
 New Moon the 21. day, at 10 hours, 25 min. in the morn.  
 First quarter the 29. day, at 1 hour, 3 min. after noon.

M.D.	Sign	Observations of the Moon, Rise, Set, and Set.	☉ Place	☽ Place	☽ Lat.	Full Sea Lond. Br.
1	h	S. Phil. & Jac.	21 8 12	8 44 5	M 16	9 19
2	c	Term begins	22 10 21	33 5	4	10 26
3	d	☿ ri. 1. 38 ma	23 8 4	48 4	35	11 35
4	e	♂ se. 10. 51 ma	24 6 18	28 3	49	12 43
5	f		25 3 2	m 36 2	49 0	M 43
6	g	Jubilate	26 1 17	7 1	37	1 50
7	a	☿ rise 1. 27 ma	26 59 1	7 56 0	16 2	48
8	b	♂ sets 0. 43 ma	27 56 16	54 1	S 5 3	40
9	c	☿ latet sub Sole	28 54 1	49 2	25 4	27
10	d		29 52 16	37 3	32 5	10
11	e	☿ rise 1. 13 ma	0 II 49 1	35 4	26 5	49
12	f	♂ sets 0. 26 ma	1 47 15	29 4	59 6	30
13	g	Cantate	2 45 29	27 5	16 7	16
14	a		3 42 13	X 1 5	35 8	3
15	b		4 40 26	18 4	56 8	59
16	c	☿ rise 0. 52 ma	5 37 9	V 17 4	22 10	0
17	d	♂ sets 0. 11 ma	6 35 22	2 3	36 11	6
18	e		7 32 4	8 36 2	40 12	15
19	f		8 30 16	55 1	37 1	A 18
20	g	Rogat. Sunday	9 27 29	6 0	31 2	12
21	a	☿ rise 0. 35 ma	10 25 11	II 11 0	M 35 3	4
22	b	♂ sets 0. 2 ma	11 22 23	8 1	40 3	47
23	c		12 19 5	5 1 1	40 4	31
24	d	Holy Thursd.	13 17 16	53 3	33 4	58
25	e	♀ & ♀ latent	14 14 28	44 4	17 5	23
26	f	sub Sole.	15 12 10	Ω 40 4	50 5	53
27	g	Exaudi	16 9 22	41 5	20 6	25
28	a	Term ends	17 6 4	m 52 5	17 7	3
29	b	K. Ch. II. N.R.	18 4 16	19 5	10 7	50
30	c		19 1 0	3 4	47 8	41
31	d		19 58 13	11 4	9 9	38

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h	in	Δ	M	D.M.	h	in	Δ	M	D.M.	h	in	Δ	S	D.M.
1	28	13	1	46	25	15	0	47	1	34	1	39		
6	28	50		46	25	44	48	4	14	35				
11	29	43		46	26	19	49	6	58	31				
16	0	II 25		45	26	30	51	9	43	28				
21	0	43		45	26	47	52	12	31	24				
26	1	20		45	26	58	53	15	20	20				

h	in	Δ	M	D.M.	h	in	Δ	M	D.M.	Eq	May, 1677.			
1	7	35	1	12	13	58	0	42	13		Eclipsed the 7th. day in the morning.			
2	8	49		11	16	4	32	12						
3	10	2		9	18	11	22	12						
4	11	16		7	20	19	11	11						
5	12	30		6	22	29	1	11						
6	13	43		4	24	40	S. 10	10						
7	14	57		2	26	51	20	10						
8	16	10		0	29	4	30	10						
9	17	24	0	59	I II	17	40	9						
10	18	37		57	3	27	50	8						
11	19	51		55	5	40	59	7						
12	21	4		53	7	51	F--8	7						
13	22	18		51	9	59	16	6						
14	23	31		49	12	9	24	5						
15	24	45		47	14	15	31	5						
16	25	58		45	16	21	38	4						
17	27	12		42	18	24	43	4						
18	28	25		40	20	25	49	3						
19	29	40		38	22	24	53	2						
20	0	II 53		36	24	19	56	2						
21	2	7		33	26	15	59	1						
22	3	20		31	28	6	2---	1						
23	4	34		29	29	55	3	1						
24	5	48		27	I 5	41	3	1						
25	7	1		25	3	25	3	*						
26	8	15		22	5	16	2	1						
27	9	28		20	6	45	0	1						
28	10	42		18	8	20	I-57	2						
29	11	55		15	9	53	54	3						
30	13	10		13	11	23	50	3						
31	14	23		11	12	50	46	4						

# June hath xxx. days.

Full Moon the 5. day, 58 min. before noon.

Last quarter the 12. day, at 2 hours, 40 min. in the morn.

New Moon the 29. day, at 1 hour, 36 min. in the morning.

First quarter the 28. day, at 0. 51 min. in the morning.

M.D.	M.D.	Festivals & Plan. Rise, Set, and Set.	☉ Place	☽ Place	☽ Lat.	Full Sea Lond. Br.
1	e		20 II 56	26 ~ 48	3 M 15	10 39
2	f		21 53	10 m 49	2 8	12 3
3	B	Whitsunday	22 50	25 17	0 53	0 M 3
4	a	☿ rise 11.40 v	23 47	10 7 9	0 S 29	1 23
5	b	♂ sets 11.19 v	24 45	25 17	1 50	2 34
6	c	☿ rise 11.31 v	25 42	10 v 32	3 5	3 34
7	d	♂ sets 11.9 v.	26 39	25 43	4 5	4 23
8	e		27 36	10 ~ 18	4 48	4 58
9	f		28 34	25 10	5 10	5 29
10	B	Trinity Sund.	29 31	9 X 16	5 14	6 2
11	a	St. Barnabas	30 S 28	22 58	4 58	6 41
12	b	☿ rise 11.5 v.	1 25	6 V 7	4 27	7 30
13	c	♂ sets 10.55 v	2 23	19 23	3 44	8 20
14	d	Corp. Christi	3 20	1 8 37	2 51	9 19
15	e	Term begins	4 17	13 55	1 50	10 23
16	f	☿ rise 2.14 ma	5 14	26 4	0 45	11 30
17	B	1 <sup>st</sup> past Trinity	6 11	8 II 5	0 M 20	12 36
18	a	☿ rise 10.39	7 9	20 1	1 25	1 A 36
19	b	♂ sets 10.34	8 6	1 S 53	2 24	2 32
20	c	☿ sets 9.7 vef.	9 3	13 45	3 18	3 20
21	d	but will scarce	10 0	25 38	4 3	3 58
22	e	be seen.	10 58	7 S 34	4 38	4 27
23	f		11 55	19 35	5 00	4 56
24	B	S. John Bapt.	12 52	1 m 43	5 10	5 23
25	a	☿ rise 1.43 ma	13 49	13 59	5 6	5 48
26	b	☿ rise 10.9 v.	14 46	26 28	4 48	6 17
27	c	♂ sets 10.11 v.	15 44	9 ~ 12	4 14	6 58
28	d		16 41	22 15	3 26	7 48
29	e	S. Peter & Paul	17 38	5 m 40	2 27	8 52
30	f		18 35	19 31	1 18	10 6

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Br.

John D.M. Virginia D.M. & S.D.M.

1847	4	4	47	4	4	47	4	4	47
1848	4	4	48	4	4	48	4	4	48
1849	4	4	49	4	4	49	4	4	49
1850	4	4	50	4	4	50	4	4	50
1851	4	4	51	4	4	51	4	4	51

John D.M. Virginia D.M. & S.D.M.

1852	4	4	52	4	4	52	4	4	52
1853	4	4	53	4	4	53	4	4	53
1854	4	4	54	4	4	54	4	4	54
1855	4	4	55	4	4	55	4	4	55
1856	4	4	56	4	4	56	4	4	56
1857	4	4	57	4	4	57	4	4	57
1858	4	4	58	4	4	58	4	4	58
1859	4	4	59	4	4	59	4	4	59
1860	4	4	60	4	4	60	4	4	60
1861	4	4	61	4	4	61	4	4	61
1862	4	4	62	4	4	62	4	4	62
1863	4	4	63	4	4	63	4	4	63
1864	4	4	64	4	4	64	4	4	64
1865	4	4	65	4	4	65	4	4	65
1866	4	4	66	4	4	66	4	4	66
1867	4	4	67	4	4	67	4	4	67
1868	4	4	68	4	4	68	4	4	68
1869	4	4	69	4	4	69	4	4	69
1870	4	4	70	4	4	70	4	4	70
1871	4	4	71	4	4	71	4	4	71
1872	4	4	72	4	4	72	4	4	72
1873	4	4	73	4	4	73	4	4	73
1874	4	4	74	4	4	74	4	4	74
1875	4	4	75	4	4	75	4	4	75
1876	4	4	76	4	4	76	4	4	76
1877	4	4	77	4	4	77	4	4	77
1878	4	4	78	4	4	78	4	4	78
1879	4	4	79	4	4	79	4	4	79
1880	4	4	80	4	4	80	4	4	80
1881	4	4	81	4	4	81	4	4	81
1882	4	4	82	4	4	82	4	4	82
1883	4	4	83	4	4	83	4	4	83
1884	4	4	84	4	4	84	4	4	84
1885	4	4	85	4	4	85	4	4	85
1886	4	4	86	4	4	86	4	4	86
1887	4	4	87	4	4	87	4	4	87
1888	4	4	88	4	4	88	4	4	88
1889	4	4	89	4	4	89	4	4	89
1890	4	4	90	4	4	90	4	4	90
1891	4	4	91	4	4	91	4	4	91
1892	4	4	92	4	4	92	4	4	92
1893	4	4	93	4	4	93	4	4	93
1894	4	4	94	4	4	94	4	4	94
1895	4	4	95	4	4	95	4	4	95
1896	4	4	96	4	4	96	4	4	96
1897	4	4	97	4	4	97	4	4	97
1898	4	4	98	4	4	98	4	4	98
1899	4	4	99	4	4	99	4	4	99
1900	4	4	00	4	4	00	4	4	00

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In II M D.M.			In III M D.M.			In Ω S D.M.					
1	2	12	1	45	27	6	0	55	18	46	116
6	2	48	45	27	6	56	22	39	11	12	
11	3	23	45	27	R	4	58	24	1	35	
16	3	59	46	26	56	59	27	31	1	5	
21	4	34	46	26	43	0	0	29	1	2	
26	5	10	46	26	26	1	3	28	0	59	

In II M D.M.			In Ω S D.M.			Eq			June, 1677.		
1	15	37	0	8	14	15	1	40	4		
2	16	51	6	15	37	34	5				
3	18	4	4	16	56	27	5				
4	19	18	1	18	12	20	6				
5	20	31	S	1	19	25	12	6			
6	21	45	4	20	34	3	7				
7	22	59	6	21	40	0	54	7			
8	24	12	8	22	45	44	7				
9	25	26	11	23	46	34	8				
10	26	39	13	24	42	23	9				
11	27	53	15	25	36	10	9				
12	29	07	18	26	27	M	1	9			
13	0	20	20	27	14	13	9				
14	1	34	22	27	57	26	10				
15	2	48	25	28	35	40	11				
16	4	1	27	29	11	54	11				
17	5	16	29	29	43	1	8	11			
18	6	30	31	0	Ω	9	22	11			
19	7	43	33	0	32	37	11				
20	8	57	36	0	50	52	12				
21	10	11	38	1	4	2	7	12			
22	11	24	40	1	14	22	12				
23	12	38	42	1	18	37	12				
24	13	52	44	1	R	17	53	12			
25	15	6	46	1	13	3	7	13			
26	16	20	48	1	4	21	13				
27	17	34	50	0	50	35	13				
28	18	48	52	0	30	48	13				
29	20	2	54	0	9	4	1	13			
30	21	15	54	29	Ω	41	12	13			

B

# July hath xxxi. days.

Full Moon the 4 day, at 3 hours 48 min. after noon.  
 Last quarter the 11. day, at 1 hour, 27 min. after noon.  
 New Moon the 19. day, at 4 hours, 40 min. after noon.  
 First quarter the 27. day, at 9 hour, 56 min. in forenoon.

M.D.	Festivals & Plan. Ris. Sou. and Ser.	☉ Place	☽ Place	☿ Lat.	Full Sea Lond. Br.
1	3 past Trinity	19	33	3 7 11 0 M	11 22
2	Visitat. B. Mary	20	30	18 32 1 S	19 12 43
3		21	27	3 37 2	34 0 M 43
4	Term ends	22	24	18 51 3	38 1 59
5	h rise 0.54 ma	23	22	4 38 4	27 3 5
6	☿ rise 9.20 ves.	24	19	19 15 4	57 3 59
7	☿ sou. 2. 2 ma	25	16	4 0 5	6 4 41
8	4 past Trinity	26	14	18 19 4	57 5 12
9	☽ sets 9.38 ves.	27	11	2 8 4	29 5 43
10		28	8	15 27 3	47 6 15
11	h rise 0.32 ma	29	6	18 17 2	55 6 46
12	☿ rise 8.58 ves.	0	3	10 47 1	56 7 42
13	☿ sou. 1.37 ma	1	0	13 30	54 8 36
14	☽ sets 9.22 ves.	1	58	5 11 30 M	12 9 38
15	5 past Trinity	2	55	16 57 1	14 10 45
16	h rise 0.6 ma	3	52	18 48 2	13 11 51
17	☿ rise 8.47 ves.	4	50	10 39 3	7 12 57
18	☿ sou. 1.16 ma	5	47	22 31 3	53 1 A 55
19	☽ sets 9.5 ves.	6	45	4 29 4	29 2 44
20	☿ rise 4.0 ma	7	42	16 33 4	52 3 27
21		8	40	28 43 5	2 4 6
22	6 past Trinity	9	37	11 24	59 4 38
23	h rise 11 47 v	10	35	13 29 4	42 5 7
24	☿ rise 8.11 ves.	11	32	6 7 4	10 5 35
25	St. James	12	30	18 57 3	26 6 1
26	☿ sou. 0.41 ma	13	27	2 11 2	31 6 38
27	☽ sets 8.41 ves.	14	25	15 22 1	26 7 30
28		15	23	29 20	14 8 34
29	7 past Trinity	16	20	13 6 1 S	1 9 42
30		17	18	27 34 2	13 11 6
31		18	15	12 19 3	17 12 26

20

Pin	M.D.M.	W.D.M.	O.M.	C.M.	D.M.
1	100	100	100	100	100
2	100	100	100	100	100
3	100	100	100	100	100
4	100	100	100	100	100
5	100	100	100	100	100
6	100	100	100	100	100
7	100	100	100	100	100
8	100	100	100	100	100
9	100	100	100	100	100
10	100	100	100	100	100
11	100	100	100	100	100
12	100	100	100	100	100
13	100	100	100	100	100
14	100	100	100	100	100
15	100	100	100	100	100
16	100	100	100	100	100
17	100	100	100	100	100
18	100	100	100	100	100
19	100	100	100	100	100
20	100	100	100	100	100
21	100	100	100	100	100
22	100	100	100	100	100
23	100	100	100	100	100
24	100	100	100	100	100
25	100	100	100	100	100
26	100	100	100	100	100
27	100	100	100	100	100
28	100	100	100	100	100
29	100	100	100	100	100
30	100	100	100	100	100
31	100	100	100	100	100
32	100	100	100	100	100
33	100	100	100	100	100
34	100	100	100	100	100
35	100	100	100	100	100
36	100	100	100	100	100
37	100	100	100	100	100
38	100	100	100	100	100
39	100	100	100	100	100
40	100	100	100	100	100
41	100	100	100	100	100
42	100	100	100	100	100
43	100	100	100	100	100
44	100	100	100	100	100
45	100	100	100	100	100
46	100	100	100	100	100
47	100	100	100	100	100
48	100	100	100	100	100
49	100	100	100	100	100
50	100	100	100	100	100
51	100	100	100	100	100
52	100	100	100	100	100
53	100	100	100	100	100
54	100	100	100	100	100
55	100	100	100	100	100
56	100	100	100	100	100
57	100	100	100	100	100
58	100	100	100	100	100
59	100	100	100	100	100
60	100	100	100	100	100
61	100	100	100	100	100
62	100	100	100	100	100
63	100	100	100	100	100
64	100	100	100	100	100
65	100	100	100	100	100
66	100	100	100	100	100
67	100	100	100	100	100
68	100	100	100	100	100
69	100	100	100	100	100
70	100	100	100	100	100
71	100	100	100	100	100
72	100	100	100	100	100
73	100	100	100	100	100
74	100	100	100	100	100
75	100	100	100	100	100
76	100	100	100	100	100
77	100	100	100	100	100
78	100	100	100	100	100
79	100	100	100	100	100
80	100	100	100	100	100
81	100	100	100	100	100
82	100	100	100	100	100
83	100	100	100	100	100
84	100	100	100	100	100
85	100	100	100	100	100
86	100	100	100	100	100
87	100	100	100	100	100
88	100	100	100	100	100
89	100	100	100	100	100
90	100	100	100	100	100
91	100	100	100	100	100
92	100	100	100	100	100
93	100	100	100	100	100
94	100	100	100	100	100
95	100	100	100	100	100
96	100	100	100	100	100
97	100	100	100	100	100
98	100	100	100	100	100
99	100	100	100	100	100
100	100	100	100	100	100



	h	i	n	I	M	D.M.	V	i	n	=	M	D.M.	S	i	n	y	S	D.M.
1	5		42	1	46	26	4	1	3	6	29	0	55					
6	6		10		47	25	38		4	9	32		52					
11	6		37		47	25	9		6	12	36		49					
16	7		5		48	24	36		7	15	41		46					
21	7		32		48	24	1		8	18	48		42					
26	8		0		49	23	24		8	21	55		39					

	Q	i	n	=	S	D.M.	Q	i	n	=	M	D.M.	Eq	July, 1677.				
1	12	29	0	57	29	12	4	23	13									
2	23	45		59	28	36		33	13									
3	24	57	1	1	28	2		40	13									
4	26	11		2	27	24		47	12									
5	27	24		4	26	44		52	12									
6	28	38		5	26	3		55	12									
7	29	52		7	25	22		57	12									
8	1	Ω	6	8	24	42		58	12									
9	2	20		10	24	1		56	12									
10	3	34		11	23	23		53	12									
11	4	47		12	22	49		49	11									
12	6	2		14	22	17		42	11									
13	7	16		15	21	51		34	11									
14	8	30		16	21	27		25	11									
15	9	44		17	21	9		14	10									
16	10	58		18	20	56		2	10									
17	12	12		19	20	48	3	49	9									
18	13	26		20	20	46		36	9									
19	14	40		21	20	D. 50		21	9									
20	15	54		22	21	2		6	8									
21	17	8		22	21	19	2	51	8									
22	18	22		23	21	43		35	8									
23	19	36		24	22	13		19	7									
24	20	51		24	22	49		3	6									
25	22	5		25	23	34	1	46	6									
26	23	19		25	24	23		30	5									
27	24	33		26	25	19		14	5									
28	25	48		26	26	12	0	59	5									
29	27	2		26	27	19		43	4									
30	28	16		26	28	44		29	3									
31	29	30		26	0	Ω	5	14	3									

ppv

Dog days beg.

B 2

# August hath xxxi. days

Full Moon the 3. day, at 45 min. in the morning.

Last quarter the 10. day, at 3 hours, in the morning.

New Moon the 18. day, at 7 hours, 16 min. in the morn.

First quarter the 25. day, at 5 hours, 25 min. after noon.

M.D.	Festivals & Plan, Ris. Sou. and Set.	☉ Place	☽ Place	D Lat.	Full Sea Lond. Br.
1	Peter ad vinc.	19	13	27	19 4 S 9 0 M 26
2	h rise 11 11 v	20	11	12	27 4 45 1 43
3	x rise 7.13 ves	21	9	27	40 5 0 2 51
4	x sou. 11.54 v	22	6	12	x 19 4 55 3 47
5	8 past Trinity	23	4	26	40 4 31 4 33
6	h rise 10.55 v	24	2	10	v 35 3 50 5 13
7	x rise 6.53 ves	25	0	23	59 2 59 5 51
8	x sou. 11 34 v	25	58	6	55 2 0 6 26
9		26	55	19	26 0 57 7 16
10		27	53	1	II 39 0 M 7 8 16
11		28	51	13	38 1 10 9 15
12	9 past Trinity	29	49	25	32 2 9 10 13
13	h rise 10.29 v	0	47	7	5 19 3 3 11 14
14	x sou. 11. 18 v	1	45	19	11 3 48 12 17
15	x sets 3.55 ma	2	43	1	Ω 6 4 24 1 A 14
16	h rise 10.18. v	3	41	13	8 4 48 2 13
17	x sou. 11.13. v	4	39	25	20 4 59 2 49
18	x sets 3.46 ma	5	37	7	42 4 57 3 24
19	10 past Trin.	6	36	20	10 4 40 3 53
20		7	34	3	0 4 9 4 19
21	h rise 10.6 ves	8	32	15	53 3 26 4 50
22	x sou. 10.42 v	9	30	28	59 2 30 5 23
23	x sets 3.20 ma	10	28	12	m 14 1 27 5 56
24	St. Bartholom.	11	27	25	40 0 16 6 35
25		12	25	9	7 21 0 S 57 7 22
26	11 past Trin.	13	23	23	15 2 6 8 19
27	h rise 9.41 ves	14	22	7	v 26 3 10 9 27
28	x sou 10.22 v	15	20	21	51 4 2 10 41
29	x sets 25.57 ma	16	19	6	33 4 40 12 1
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h in II M			D. M			V in III M			D. M.			S in IV S			D. M.		
1	8	26	1	49	22	37	1	9	25	43	0	35					
6	8	42		50	21	58		10	28	54		32					
11	8	58		51	21	19		11	1	6		29					
16	9	13		51	20	41		11	5	20		26					
21	9	28		51	20	4		11	8	39		23					
26	9	44		53	19	30		11	11	52		20					
Q in IV M			D. M.			Q in V M			D. M.			E.			August, 1677.		
1	0	45	1	26	1	30	0	0	2								
2	1	59		26	2	59	S	13	2								
3	3	13		26	4	34		25	1								
4	4	27		26	6	12		36	1								
5	5	41		26	7	56		47	*								
6	6	55		25	9	42		57	1								
7	8	9		25	11	31	I	6	1								
8	9	23		25	13	24		14	2								
9	10	37		24	15	19		21	3								
10	11	51		24	17	15		27	3								
11	13	5		23	19	12		31	3								
12	14	19		22	21	9		36	4								
13	15	33		21	23	10		39	5								
14	16	48		21	25	9		42	6								
15	18	2		20	27	8		43	6								
16	19	16		19	29	9		44	7								
17	20	30		18	1 <sup>m</sup>	8		44	7								
18	21	44		17	3	6		44	8								
19	22	58		16	5	4		43	8								
20	24	12		14	7	0		41	9								
21	25	26		13	8	56		39	10								
22	26	40		12	10	52		36	10								
23	27	54		10	12	45		33	10								
24	29	8		9	14	37		29	11								
25	0	22		7	16	30		25	12								
26	1	36		6	18	20		20	12								
27	2	50		4	20	9		15	13								
28	4	4		3	21	57		10	13								
29	5	18		1	23	44		5	14								
30	6	32	0	59	25	30	0	50	14								
31	7	46		57	27	14		53	15								

Add

Subtract

Dog days end.

B 3

# September hath xxx. days.

Full Moon the 1 day, at 9. hours, 29 min. in the morn.

Last quarter the 8. day, 9. hours, 2 min. at night.

New Moon the 16. day, at 9 hours, 19 min. at night.

First quarter the 24 day, at 6 min. in the morning.

Full Moon the last day, at 8 hours, 12 min. at night.

M.D.	M.D.	Festivals & Elands Rise, Set, and Set.	Place	Place	Lat.	Full Sea Lond. Br.
1	f		19 <sup>m</sup> 14	20 <sup>x</sup> 30	4 S 38	2 M 22
2	g	12 past Trin.	20 13	4 <sup>y</sup> 45	4 13	19
3	a	h rise 9.15 ves	21 11	18 35	3 11	4 3
4	b	h sou. 4.3 ma	22 10	2 8	2 10	4 38
5	c	2 <sup>x</sup> sou. 9.50 ves	23 8	15 0	1 5	5 17
6	d	2 <sup>x</sup> sets 2.33 ma	24 7	27 35	0 M 1	5 43
7	e		25 6	9 II 49	1 6	6 17
8	f	Nat. V. Mary	26 5	21 50	2 7	6 55
9	g	13 past Trin.	27 3	3 41	3 17	42
10	a	h rise 8.47 ves	28 2	15 30	3 48	8 35
11	b	h sou. 4.33 ma	29 1	27 22	4 25	9 32
12	c	2 <sup>x</sup> sou. 9.21 ves	0 0	9 18	4 50	10 20
13	d	2 <sup>x</sup> sets 2.4 ma	0 59	21 24	5 4	11 43
14	e	Holy Cross	1 58	3 43	5 4	12 44
15	f		2 57	16 17	4 48	1 A 42
16	g	14 past Trin.	3 56	29 5	4 19	2 34
17	a	h rise 8.32 ves	4 55	12 6	3 35	3 19
18	b	h sou. 4.14 ma	5 54	25 25	2 39	4 5
19	c	2 <sup>x</sup> sou. 8.57 ves	6 53	8 50	1 33	4 42
20	d	2 <sup>x</sup> sets 1.27 ma	7 52	22 27	0 21	5 16
21	e	St. Matthew	8 51	6 11	0 S 53	5 50
22	f		9 51	20 5	2 5	6 30
23	g	15 past Trin.	10 50	4 3	3 10	7 19
24	a	h rise 8.4 ves	11 49	18 8	4 4	8 20
25	b	h sou. 2.46 ma	12 48	2 20	4 43	9 27
26	c	2 <sup>x</sup> sou. 8.28 ves	13 48	16 35	5 5	10 41
27	d	2 <sup>x</sup> sets 0.58 ma	14 47	0 51	5 9	11 55
28	e		15 47	15 6	5 53	13 2
29	f	St. Michael	16 46	29 11	4 20	1 M 2
30	g	16 past Trin.	17 45	13 13	3 31	2 5

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	h	in	II	M	D. M.	h	in	III	M	D. M.	h	in	IV	S	D. M.
1	9			47	1	54	18		53	1	10	15		50	0-16
6	9			50		54	18		26		10	19		9	13
11	9			53		53	18		3		9	22		30	10
16	9	R.		51		56	17		44		9	25		53	6
21	9			49		56	17		30		9	29		17	3
26	9			46		57	17		21		8	2	m	42	0

	h	in	IV	S	D. M.	h	in	V	S	D. M.	Eq	Septemb. 1677.		
1	9			0	Q	55	28		58	0-47	15			
2	10			14		53	0	≈	41		41	15		
3	11			28		51	2		21		34	16		
4	12			42		49	4		2		27	16		
5	13			56		47	5		42		20	17		
6	15			10		45	7		20		13	17		
7	16			24		43	8		57		6	17		
8	17			38		41	10		33	M	1	18		
9	18			52		38	12		9		8	18		
10	20			6		36	13		43		15	18		
11	21			20		34	15		16		22	19		
12	22			34		31	16		48		30	19		
13	23			48		29	18		20		37	19		
14	25			2		26	19		50		44	19		
15	26			16		24	21		20		51	20		
16	27			30		21	22		48		59	20		
17	28			44		19	24		16	I	6	20		
18	29			57		16	25		43		13	20		
19	1	m		11		14	27		9		20	20		
20	2			25		11	28		33		27	20		
21	3			39		8	29		57		34	21		
22	4			53		6	1	m	17		41	21		
23	6			7		3	2		38		48	21		
24	7			21		0	3		59		54	21		
25	8			35	M	3	5		21	2	0	21		
26	9			49		5	6		40		6	21		
27	11			12		8	7		56		12	21		
28	12			26		11	9		11		18	21		
29	13			30		14	10		26		24	21		
30	14			42		17	11		40		29	21		

Subtract

October hath xxxi. days.

Last quarter the 8. day, at 4 hours, 42 min. after noon.  
 New Moon the 16. day, at 10 hour, 47 min. before noon.  
 First quarter the 23. day, at 7 hours, 4 min. in the morn.  
 Full Moon the 30. day, at 10 h. 54 min. before noon.

Day	Letter	Festivals & Plan. Ris. Sou. and Set.	☉ Place	☽ Place	☽ Lat.	Full Sea Lond. Br.
1	a	h rise 7.35 ves	18 45	26 39	2 32	3 M 1
2	b	h sou. 3.21 ma	19 45	9 54	1 26	3 46
3	c	☿ sou. 7.55 ves	20 44	22 48	0 16	4 24
4	d	☿ sets 0.34 ma	21 44	5 11	0 M 52	4 59
5	e		22 43	17 42	1 57	5 29
6	f		23 43	29 44	2 56	6 2
7	g	17 past Trin.	24 43	11 38	3 56	6 39
8	a	h rise 7. 7 ves	25 43	23 27	4 25	7 19
9	b	h sou. 2.53 ma	26 42	4 58	4 53	8 9
10	c	☿ sou. 7. 26 ves	27 42	17 13	5 10	9 1
11	d	☿ sets 0. 6 ma	28 42	29 20	5 13	10 0
12	e		29 42	11 37	5 2	11 4
13	f		0 m 42	24 7	4 36	12 28
14	g	18 past Trin.	1 42	7 11	3 55	1 A 47
15	a	h rise 6.38 ves	2 42	20 35	3 0	2 54
16	b	h sou. 2.26 ma	3 42	4 11	1 55	3 49
17	c	☿ sou. 7.10 ves	4 42	18 40	0 40	4 23
18	d	St. Luke Evan.	5 42	2 10	0 S 37	4 54
19	e	☿ sets 11.39 v	6 42	16 22	1 53	5 23
20	f		7 42	0 37	3 3	5 33
21	g	19 past Trin.	8 42	14 55	4 1	6 26
22	a		9 42	29 8	4 45	7 11
23	b	Term begins	10 42	13 16	5 9	8 6
24	c	h rise 6. 6 ves	11 43	27 19	5 17	9 5
25	d	h sou. 1.54 ma	12 43	11 10	5 5	10 13
26	e	☿ sou. 6.34 ves	13 44	25 14	35 11	11 24
27	f	☿ sets 11.6 v	14 44	8 35	3 51	12 32
28	g	St. Simon & Ju	15 44	23 3	2 55	0 M 32
29	a	☿ sets 5.40 ves	16 45	5 14	1 50	1 36
30	b		17 45	18 11	0 40	2 32
31	c		18 46	0 11	0 M 30	3 21

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h	in	II	M	D.	M.	V	in	III	M	D.	M.	Q	in	III	M	D.	M.
1	9		30	1	58	17	17			1	8	6		9	0	0	
6	9		14		58	17	D.18			7	9	38			1		
11	8		58		59	17	26			6	13	7			3		
16	8		42		59	17	35			5	16	39			6		
21	8		26		9	17	51			5	20	11			9		
26	3		9	2	50	18	11			4	23	46			12		

Q	in	III	M	D.	M.	2	in	III	M	D.	M.	Eq	October, 1677				
1	15		57	0	19	12	51	2	34	20							
2	17		11		22	13	59			39	20						
3	18		24		25	15	5			43	20						
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6	22		6		34	18	12			54	20						
7	23		19		36	19	9			57	19						
8	24		33		39	20	3			59	19						
9	25		47		42	20	54			3	19						
10	27		1		45	21	41			0	19						
11	28		14		47	22	22			1	18						
12	28		28		50	23	3			2	18						
13	0	7	42		53	23	34			1	18						
14	1		56		56	24	0	2	59	18							
15	3		9		58	24	29			57	17						
16	4		23	1	1	24	34			55	17						
17	5		37		4	24	40			49	16						
18	6		50		6	24	R.38			43	16						
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21	10		30		14	23	39			16	14						
22	11		44		17	23	0			4	14						
23	12		57		19	22	13	1	51	13							
24	14		11		22	21	14			35	13						
25	15		23		24	20	8			18	12						
26	16		37		27	18	57			0	12						
27	17		50		29	17	38	0	41	11							
28	19		4		31	16	17			21	10						
29	20		17		33	14	56			0	10						
30	21		30		35	13	38	S	20	9							
31	22		43		37	12	25			40	9						

Subtract

# November hath xxx. days.

Last quarter the 7. day, at 1 hour, 9 min. afternoon.

New Moon the 14. day, at 11 hours, 13 min. at night.

First quarter the 21 day, at 3 hours, 22 min. after noon.

Full Moon the 29 day, at 4 hours, 12 min. in the morn.

M.D.	W.D.	Festivals & Plan. Rif. Sou. and Set.	☉ Place	☽ Place	☽ Lat.	Full Sea Load. Br.
1	n	All Saints	19m 47	13 II 21	1 M 38	4 M 5
2	e	All Souls	20 46	25 35	2 40	4 40
3	f		21 47	7 38	3 34	5 12
4	a	21 past Trin.	22 48	19 35	4 19	5 41
5	b	Powder Treas.	23 48	1 26	4 51	6 11
6	c	h rise 5. 8 ves	24 49	13 18	5 10	6 47
7	d	h sou. o. 52 ma	25 49	25 12	5 18	7 32
8	e	☿ sets 5. 56 ves	26 50	7 16	5 12	8 19
9	f	☿ sets 10. 24 v	27 51	19 34	4 50	9 9
10	a	♀ sets 6. 6 ves	28 51	2 12	4 15	10 7
11	b	22 past Trin.	29 52	15 11	3 26	11 6
12	c	h rise 4. 44 v	0 53	28 33	2 25	12 9
13	d	h sou. o. 28 ma	1 54	12m 19	1 12	1 A 13
14	e	☿ sets 5. 31 ves	2 54	26 30	0 S 6	2 32
15	f	☿ sets re. o v	3 55	11 11	1 25	3 28
16	a	h rise 4. 24 ves	4 56	25 44	2 40	4 17
17	b	h sou. o. 6 ma	5 57	10 28	3 44	4 54
18	c	23 past Trin.	6 58	25 11	4 35	5 29
19	d	☿ sets 5. 11 ves	7 58	9 46	5 5	6 3
20	e	☿ sets 9. 44 ves	8 59	24 5	5 17	6 46
21	f	☉ sets 6. 30 ves	10 0	7 9	5 10	7 38
22	a	h rise 4. 0 ves	11 1	21 55	4 44	8 32
23	b	h sou. 11. 40 v	12 2	5 27	4 3	9 33
24	c	☿ sets 4. 50 ves	13 3	18 41	3 10	10 37
25	d	24 past Trin.	14 4	1 42	2 8	11 49
26	e	☿ sets 9. 23 ves	15 5	14 28	1 0	12 54
27	f	♀ sets 5. 44 ves	16 6	27 50	0 M 9	0 M 54
28	a	Term ends	17 7	9 29	1 16	1 56
29	b		18 8	21 45	2 20	2 49
30	c	St. Andrew	19 9	3 54	3 16	3 36

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6	7	17	0	19	12	2	1	4	41	13	19
11	7	4	0	19	47	2	5	20	21		
16	6	40	1 59	20	25	1	8	59	24		
21	6	7	59	21	8	0	12	41	27		
26	5	47	58	21	53	0	16	23	30		

Qin	T	M	D.M.	Qinn	S	D.M.	Eq	November, 1677.			
1	23	56	1 39	11	20	1 16	8	Subtract			
2	25	10	41	10	24	32	7				
3	26	3	43	9	37	46	6				
4	27	36	45	9	13	57	6				
5	28	50	47	8	43	2 7	5				
6	0	vp 3	49	8	31	14	4				
7	1	16	50	8	Dir. 32	20	3				
8	2	29	52	8	44	24	3				
9	3	42	54	9	7	26	1				
10	4	54	55	9	38	27	1				
11	6	7	56	10	17	27	*				
12	7	21	58	11	4	25	1				
13	8	34	59	11	57	23	1				
14	9	47	2 0	12	55	20	2				
15	11	0	1 13	58	15	3		Add			
16	12	2	2 15	6	11	4					
17	13	24	3 16	17	6	5					
18	14	38	4 17	32	0	5					
19	15	51	5 18	47	1 54	7					
20	17	4	6 20	6	47	7					
21	18	15	6 21	27	41	8					
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24	21	53	8 25	41	20	11					
25	23	6	8 27	7	12	11					
26	24	18	8 28	34	5	13					
27	25	32	8 0	7 10	58	13					
28	26	2	8 1	30	50	14					
29	27	54	8 2	59	43	15					
30	29	6	8 4	28	35	16					

# December hath xxxi. days.

Last quarter the 7. day, at 8 hours, 38 min. in the morn.  
 New Moon the 14 day, at 10 hours, 42 min. in the morn.  
 First quarter the 21. day, at 2 hours, 7 min. in the morn.  
 Full Moon the 28. day, at 11 hours, 13 min. at night.

M.D.	Festivals & Plan. Ris. Sow. and Set.	☉ Place	☽ Place	☽ Lat.	Full Sea Lond. B.
1	f	20 7 10	15 5 41	4	2 4 13
2	⊙ Adv. Sund.	31 21	27 49	4	39 4 48
3	h sou. 10. 52 v	22 12	9 5 44	5	2 5 15
4	h sou. 10. 46 v	23 13	21 36	5	13 5 42
5	☿ sets 8. 55 ves	24 14	3 32	5	11 6 10
6	☿ sets 8. 51 ves	25 16	15 35	4	54 6 44
7	♀ sets 7. 5 ves	26 17	27 51	4	24 7 24
8	f	27 18	10 23	3	41 8 18
9	⊙ 2 Sund. Adv.	28 19	23 14	2	46 9 16
10	h sou. 10. 9 v	29 20	6 32	1	40 10 21
11	h sou. 10. 4 v	0 21	20 18	0	26 11 30
12	☿ sets 8. 26 v	1 22	4 7 32	0 S	51 12 38
13	♀ sets 7. 26 v	2 23	19 9	2	6 1 A 56
14	f	3 24	4 9	3	16 3 2
15	⊙ 3 Sund. Adv.	4 26	19 20	4	12 3 56
16	h sou. 9. 43 v	5 27	4 28	4	50 4 40
17	h sou. 9. 39 v	6 28	19 28	5	8 5 13
18	☿ sets 8. 10 v	7 29	4 7 5	5	6 5 44
19	♀ sets 7. 40 v	8 30	18 24	4	43 6 18
20	St. Thomas	9 31	2 14	4	5 7 1
21	f	10 32	15 41	3	15 7 55
22	⊙ 4 Sund. Adv.	11 34	28 45	2	14 8 48
23	h sou. 9. 39 v	12 35	11 31	1	9 9 50
24	h sou. 9. 39 v	13 36	24 2	0	2 10 54
25	Nat. Christ	14 37	6 23	1 M	4 12 2
26	St. Stephen	15 38	18 33	2	7 0 M 2
27	St. John	16 39	0 38	3	2 1 4
28	Innocents	17 40	12 37	3	49 2 4
29	f	18 42	24 35	4	27 2 55
30	⊙	19 43	6 30	4	51 3 39
31	a	20 44	18 25	5	3 4 16



STATE OF NEW YORK

In SENATE,  
January 11, 1881.

REPORT  
OF THE  
COMMISSIONERS OF THE LAND OFFICE

ALBANY:  
J. B. LEECH, STATE PRINTER,  
1881.

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$\frac{1}{2}$ in II M	D.M.	$\frac{1}{2}$ in III M	D.M.	$\frac{1}{2}$ in IV M	D.M.
1 5 27	58	22 43	0 59	20 7	0 33
6 5 50	57	23 34	59 23	52	35
11 4 38	56	24 27	58 27	37	38
16 4 18	55	25 27	58 1	25	40
21 4 0	54	26 26	57 5	13	43
26 3 43	53	27 28	57 9	2	45

$\frac{1}{2}$ in III M	D.M.	$\frac{1}{2}$ in IV S	D.M.	Eq	Decemb. 1677.
1 0 17	2 7 5	58	0 28	17	
2 1 29	7 7	28	21	17	
3 2 41	6 8	59	13	18	
4 3 53	6 10	30	6	19	
5 5	5 12	1 M	1	20	
6 6 16	4 13	32	8	20	
7 7 28	3 15	4	15	21	
8 8 40	2 16	36	22	21	
9 9 51	1 18	8	28	23	
10 11 2	0 19	40	35	23	
11 12 13	I 58 11	13	42	23	
12 13 24	57 22	46	47	24	
13 14 35	55 24	19	53	25	
14 15 44	53 25	52	59	26	
15 16 57	52 27	26 I	4	26	
16 18 8	50 28	58	9	27	
17 19 16	48 0	32	15	27	
18 20 28	45 2	7	20	28	
19 21 38	43 3	42	25	28	
20 22 49	41 5	17	30	28	
21 23 59	38 6	52	35	29	
22 25 10	36 8	28	39	29	
23 26 19	33 10	4	42	29	
24 27 28	30 11	40	46	29	
25 28 37	28 13	17	49	29	
26 29 46	25 14	54	52	30	
27 0 56	21 16	32	55	30	
28 2 5	17 18	10	57	30	
29 3 14	15 19	49 2	0	30	
30 4 23	11 21	27	1	30	
31 5 31	7 23	7	3	30	

Add

C

## An Explication of the Pages of the ALMANACK.

**E**very month has two, the left and the right hand Pages. The left hand Page contains 7 Columns.  
 1. The days of the Month. 2. The Dominical Letter, and other letters for the Week-days. 3. The Festival norable days; the time of the Rising, Southing, and Setting of the Planets, where  $\text{♄}$  stands for *Saturn*,  $\text{♃}$  for *Jupiter*, and  $\text{♂}$  for *Mars*,  $\text{♀}$  for *Venus*, and  $\text{☿}$  for *Mercury*.  
 4. The  $\odot$  place. 5. The  $\text{♊}$  place. 6. The  $\text{♊}$  latitude, Septentrional or Meridional. The 7th. is the time of High-water at *London-bridge*, and at *Tinmouth* (much differing from the ordinary Accompt) and observing to add or subtract the time set to the places following, to or from the time in this Column serves at those places. *Barwick, Flushing, and Hamborough*, add 45'. *Cork, Severn, Calice*, add 1 h. 30'. *Falmouth and Humber*, add 2 h. 15'. *Plimouth, Hull, Lyn*, add 3 h. *Bristol*, add 3 h. 45'. *Milford and Landsend*, add 4 h. 30'. *Portland and Dublin*, add 5 h. 15'. *Pool, Dunbar, and Diep*, add 6 h.

But for *Gravesend, Downes, and Scilly*, subtract 1 h. 30'. *Rocheſter and Black-Tail* subtract 2 h. 15'. *Sheerneſſe, Southampton, and Portsmouth*, subtract 3 h. *Rye*, subtract 3 h. 45'. *Yarmouth and Dover*, subtract 4 h. 30'. *Needles, Orford, North and South Forlands*, subtract 5 h. 15'. Note M stands for Morning, A Afternoon.

The right hand Page has 7 Columns at the top; the first Column has the first day of each Month, and every fifth day more. 2 has  $\text{♊}$  place: 3 his latitude: 4  $\text{♊}$  place: 5 his latitude: 6  $\text{♂}$  his place, and 7. his latitude. Below 6 Columns; the first contains the days of the Month: the 2.  $\text{♀}$  place: 3. her latitude: 4.  $\text{♀}$  place: 5 his latitude: 6. The Table of Equations.

Note that *France, Italy, and many other places beyond the Seas* that follow the New or Gregorian Accompt, precedes ours by ten days; so that adding ten to ours, you have the Forein Accompt.

The

## The Kings Offering-Days.

**H**ouſhold-days when the Befant is to be given to the Lord Steward, or other Whiteſtaff Officer,

*Viz.* { Christmas day.  
Eaſter-day.  
Whitſunday.  
All-Saints.

Gold, Myrrh, and Frankincenſe to be offered

On { New years-day.  
Twelfth day.

### Other Offering-Days.

*Viz.* { Candlemas-day.  
Lady-day.  
Aſcenſion.  
Trinity-Sunday.  
St. John Baptiſt.  
St. Michael the Archangel.

### The Kings Collar-days without Offering.

**T**HE Holy-days and Sundays in the Twelve days, St. Matthias, Coronation-day, Holy-days in Eaſter and Whitſun-weeks, St. George, St. Mark, St. Philip and Jacob, Kings Birth-day, St. Peter, St. James, St. Bartholomew, St. Matthew, St. Luke, St. Simon and Jude, Gunpowder-Treaſon, St. Andrew, and St. Thomas.

*An Explication of the following Tables,  
besides the Top-space for break of Day,  
for every fifth day.*

**T**O every Month belongs four Columns.

The first is common to the other three,  
being the days of the Month.

The Second is the Suns Rising for each day,  
and taking that from 12 hours it gives the Set-  
ting; for the Sun will rise so much before or  
after six as he shall set after or before six.

The Third Column gives the time when the  
Moon comes truly South in the Meridian of  
London, having respect to her Latitude: M sig-  
nifies Morning, A afternoon.

The Fourth gives the Moons Rising and Set-  
ting.

After these followeth the Tables of the  
Suns Right Ascension in time for every day  
at Noon.

And a Table of 30 of the most notable fixed  
Stars, whose Uses follow them.

January



# January.

## Day-Break.

1 day 5 h. 52'. 6 day 5 h. 48'.  
 11 day 5 h. 43'. 16 day 5 h.  
 37'. 21 day 5 h. 30'. 26 day  
 5 h. 22'.

	☉	D	D
	Rise.	South.	Ri.&Set
1	8 0	6A. 25	D Sets
2	7 59	7 12	1M. 14
3	7 58	7 59	2 21
4	7 57	8 46	3 28
5	7 55	9 32	4 18
6	7 54	10 22	5 1
7	7 53	11 12	5 50
8	7 52	11 58	D Rise
9	7 51	12 46	4 30
10	7 49	OM. 46	5 32
11	7 47	1 40	6 24
12	7 46	2 34	7 51
13	7 44	3 29	9 3
14	7 43	4 23	10 15
15	7 40	5 19	11 31
16	7 39	6 16	12 35
17	7 38	7 13	OM. 35
18	7 37	8 10	2 3
19	7 35	9 8	3 18
20	7 34	10 7	4 18
21	7 32	10 54	5 5
22	7 30	11 41	5 39
23	7 28	12 28	D Sets
24	7 27	1A. 15	5 57
25	7 25	2 3	7 12
26	7 23	2 49	8 25
27	7 21	3 35	9 42
28	7 19	4 21	10 51
29	7 18	5 7	12 1
30	7 16	5 53	OM. 1
31	7 14	6 39	1 5

# February.

## Day-Break.

1 day 5 h. 13'. 6 day 5 h. 5'.  
 11 day 4 h. 57'. 16 day 4 h.  
 47'. 21 day 4 h. 37'. 26 day  
 4 h. 27'.

	☉	D	D
	Rise.	South.	Ri.&Set
1	7 12	7 26	2 2
2	7 10	8 13	2 54
3	7 8	9 1	3 39
4	7 6	9 49	4 9
5	7 4	10 37	4 41
6	7 3	11 22	5 9
7	7 1	12 8	5 31
8	6 59	OM. 8	D Rise
9	6 57	0 54	6 50
10	6 55	1 40	8 7
11	6 53	2 26	9 22
12	6 51	3 20	10 36
13	6 50	4 15	11 56
14	6 48	5 10	13 3
15	6 46	6 5	1M. 3
16	6 43	7 0	2 8
17	6 41	7 57	3 3
18	6 39	8 55	3 38
19	6 37	9 53	4 10
20	6 35	10 51	4 41
21	6 33	11 49	5 0
22	6 31	12 24	D Sets
23	6 29	1A. 16	7 23
24	6 27	2 8	8 37
25	6 25	3 5	9 48
26	6 23	3 53	10 54
27	6 21	4 41	11 53
28	6 19	5 31	12 50
C 3.			

# March.

## Day-Break.

1 day 4h. 21'. 6 day 4 h. 9'.  
 11 day 3 h. 58'. 16 day 3 h.  
 46'. 21 day 3 h. 34'. 26 day  
 3 h. 22'.

	☉	D	D	
	Rise.	South.	Ri.&Set	
1	6 17	6 17	oM. 50	
2	6 15	7 4	1 34	
3	6 13	7 50	2 16	
4	6 11	8 37	2 46	
5	6 9	9 24	3 13	
6	6 7	10 11	3 40	
7	6 5	10 58	3 58	
8	6 3	11 45	4 17	
9	6 1	12 31	4 39	
10	5 59	oM. 31	D Rise	
11	5 57	1 18	8 29	
12	5 55	2 15	9 44	
13	5 53	3 12	11 2	
14	5 51	4 9	12 8	
15	5 49	5 6	M 8	
16	5 47	6 4	1 1	
17	5 45	6 59	1 45	
18	5 43	7 54	2 19	
19	5 41	8 49	2 49	
20	5 39	9 44	3 11	
21	5 37	10 38	3 33	
22	5 35	11 15	3 55	
23	5 33	12 2	D Sets	
24	5 31	12 49	7 33	
25	5 29	1A. 46	8 43	
26	5 27	2 26	9 48	
27	5 25	3 6	10 48	
28	5 23	3 46	11 36	
29	5 21	4 26	12 20	
30	5 19	5 4	oM. 20	
31	5 17	6 15	o 53	

# April.

## Day-Break.

1 day 3 h. 5'. 6 day 2 h. 51'.  
 11 day 2 h 37'. 16 day 2 h.  
 21', 21 day 2 h. 13'. 26 day  
 1 h. 47'.

	☉	D	D	
	Rise.	South.	Ri.&Set	
1	5 16	7 28	1 21	
2	5 14	8 12	1 46	
3	5 12	8 56	2 10	
4	5 10	9 38	2 31	
5	5 8	10 24	2 51	
6	5 6	11 20	3 12	
7	5 4	12 16	3 30	
8	5 2	oM. 16	D Rise	
9	5 0	1 12	8 51	
10	4 58	2 8	10 0	
11	4 56	3 4	11 3	
12	4 54	4 0	11 53	
13	4 53	4 56	12 27	
14	4 51	5 52	oM. 27	
15	4 49	6 48	0 54	
16	4 47	7 45	1 22	
17	4 45	8 27	1 45	
18	4 43	8 11	2 8	
19	4 41	9 57	2 28	
20	4 39	10 45	2 53	
21	4 37	11 33	D Sets	
22	4 35	12 23	7 39	
23	4 33	1A. 19	8 44	
24	4 31	2 8	9 34	
25	4 29	2 59	10 19	
26	4 28	3 45	10 55	
27	4 27	4 31	11 28	
28	4 26	5 17	11 54	
29	4 25	6 3	12 16	
30	4 24	6 49	oM. 16	

May.

June.

Day-Break.

1 day 1 h. 25'. 6 day 0 h. 58'. All the rest day.

All Day.

	May.			June.		
	☉ Rise.	☽ South.	☽ Ri.&Set	☉ Rise.	☽ South.	☽ Ri.&Set
21	1 4 23	7 34	oA. 38	1 3 50	8 34	oM. 2
46	2 4 22	8 24	o 55	2 3 49	9 35	o 32
10	3 4 21	9 14	1 21	3 3 49	10 36	1 6
31	4 4 19	10 5	1 38	4 3 49	11 37	1 49
51	5 4 17	11 56	2 11	5 3 48	12 38	2 44
12	6 4 15	11 49	D. Rise	6 3 48	oM. 38	D. Rise
30	7 4 14	12 45	7 51	7 3 48	1 39	8 56
Rise	8 4 12	oM. 45	8 53	8 3 48	2 31	9 28
51	9 4 11	1 46	9 50	9 3 48	3 23	9 53
0	10 4 9	2 51	10 27	10 3 48	4 15	10 13
3	11 4 8	3 54	11 2	11 3 47	5 7	10 38
53	12 4 7	4 52	11 30	12 3 48	5 59	10 56
27	13 4 6	5 46	11 53	13 3 48	6 47	11 21
1.27	14 4 4	6 29	12 13	14 3 48	7 35	11 47
54	15 4 3	7 19	oM. 13	15 3 48	8 23	12 16
22	16 4 2	8 7	o 34	16 3 48	9 11	9M. 16
45	17 4 1	8 53	o 55	17 3 49	9 59	o 54
8	18 4 0	9 43	1 20	18 3 49	10 47	1 30
28	19 3 59	10 32	1 47	19 3 49	11 35	2 24
53	20 3 58	11 17	2 18	20 3 50	12 23	D. Sets
Sets	21 3 57	12 5	D. Sets	21 3 50	1A. 5	7 53
39	22 3 57	oA. 52	8 15	22 3 51	1 47	8 20
44	23 3 56	1 52	8 54	23 3 52	2 29	8 40
34	24 3 55	2 32	9 29	24 3 52	3 11	8 59
19	25 3 54	3 13	9 56	25 3 53	3 53	9 19
55	26 3 53	4 1	10 17	26 3 53	4 37	9 41
28	27 3 53	4 46	10 39	27 3 54	5 26	10 4
54	28 3 52	5 32	10 58	28 3 55	6 17	10 25
16	29 3 52	6 18	11 16	29 3 56	7 13	11 3
16	30 3 51	7 4	11 38	30 3 57	8 10	11 36
1	31 3 50	7 49	12 2			

# July.

## Day-Break.

1, 6, 11 dayes, all day, 16 day 0 h. 52'. 21 day 1 h. 20'. 26 day 2 h. 42'.

	☉	☽	☽	
	Rise.	South.	Ri.&Set	
1	3 57	9 5	12 20	
2	3 58	10 5	0M. 29	
3	3 59	11 6	1 19	
4	4 0	12 1	2 48	
5	4 1	0M. 5	D Rise	
6	4 2	1 6	7 53	
7	4 3	2 5	8 13	
8	4 4	2 55	8 29	
9	4 5	3 44	8 56	
10	4 7	4 33	9 22	
11	4 8	5 12	9 45	
12	4 9	6 11	10 17	
13	4 11	7 0	10 50	
14	4 12	7 49	11 25	
15	4 14	8 38	12 12	
16	4 15	9 27	0M. 12	
17	4 17	10 17	0 59	
18	4 18	11 1	2 9	
19	4 20	11 46	3 14	
20	4 21	12 31	D Sets	
21	4 23	1A. 16	7 3	
22	4 24	2 1	7 20	
23	4 26	2 46	7 46	
24	4 28	3 32	8 6	
25	4 30	4 17	8 29	
26	4 31	5 2	8 57	
27	4 33	6 0	9 30	
28	4 34	6 58	10 13	
29	4 35	7 56	11 7	
30	4 36	8 54	12 12	
31	4 38	9 53	0M. 12	

# August.

## Day-Break.

1 day 2 h. 3'. 6 day 2 h. 20'. 11 day 2 h. 35'. 16 day 2 h. 56'. 21 day 3 h. 9'. 26 day 3 h. 17'.

	☉	☽	☽	
	Rise.	South.	Ri.&Set	
1	4 40	10 51	1 33	
2	4 42	11 52	2 56	
3	4 44	12 53	D Sets	
4	4 46	0M. 53	6 39	
5	4 47	1 55	7 3	
6	4 49	2 57	7 26	
7	4 51	3 59	7 53	
8	4 53	4 52	8 23	
9	4 55	5 45	8 54	
10	4 57	6 38	9 31	
11	4 59	7 31	10 16	
12	5 0	8 15	11 6	
13	5 2	8 59	12 8	
14	5 4	9 43	0M. 8	
15	5 6	10 28	1 9	
16	5 7	11 13	2 16	
17	5 9	11 50	3 22	
18	5 11	12 27	D Sets	
19	5 13	0A. 58	6 1	
20	5 15	1 35	6 20	
21	5 17	2 20	6 45	
22	5 19	3 13	7 12	
23	5 21	4 6	7 43	
24	5 23	4 59	8 20	
25	5 25	5 52	9 10	
26	5 26	6 45	10 4	
27	5 28	7 41	11 22	
28	5 30	8 37	12 40	
29	5 32	9 33	0M. 40	
30	5 34	10 29	2 4	
31	5 36	11 26	3 7	

# September.

## Day-Break.

1 day 3 h. 33'. 6 day 3 h. 46'. 11 day 3 h. 57'. 16 day 4 h. 8'. 21 day 4 h. 19'.

20'.  
2 h.  
day

Set

33

56

Sets

39

3

26

53

23

54

31

6

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30

# October.

## Day-Break.

1 day 4 h. 40'. 6 day 4 h. 50'. 11 day 4 h. 59'. 16 day 5 h. 5'. 21 day 5 h. 15'. 26 day 5 h. 26'.

	☉	D	D		☉	D	D
	Rise.	South.	Ri.&Set		Rise.	South.	Ri.&Set
1	5 38	12 23	D Rise	1	6 38	Mo. 1	4 34
2	5 40	oM. 23	5 35	2	6 40	0 52	5 14
3	5 42	1 13	5 59	3	6 42	1 42	5 45
4	5 44	2 3	6 29	4	6 44	2 32	6 21
5	5 46	2 54	7 0	5	6 46	3 23	7 11
6	5 48	3 45	7 37	6	6 48	4 14	8 6
7	5 50	4 36	8 20	7	6 50	5 4	9 6
8	5 52	5 23	9 10	8	6 52	5 49	10 6
9	5 54	6 11	10 5	9	6 53	6 35	11 11
10	5 56	6 59	11 7	10	6 54	7 21	12 15
11	5 58	7 47	12 10	11	6 55	8 7	oM. 15
12	6 0	8 35	oM. 10	12	6 57	8 53	1 22
13	6 2	9 20	1 17	13	6 59	9 53	2 31
14	6 4	10 5	2 28	14	7 1	10 54	3 41
15	6 6	10 50	3 30	15	7 3	11 54	4 53
16	6 8	11 36	4 45	16	7 5	oA. 55	D Sets
17	6 10	12 22	D Sets	17	7 7	1 41	4 34
18	6 12	1 15	5 20	18	7 9	2 27	5 12
19	6 14	2 8	5 54	19	7 11	3 14	6 16
20	6 16	3 2	6 28	20	7 13	4 1	7 19
21	6 18	3 56	7 15	21	7 15	4 48	8 32
22	6 20	4 52	8 10	22	7 17	5 40	9 45
23	6 22	5 58	9 20	23	7 19	6 32	11 5
24	6 24	6 44	10 36	24	7 21	7 24	12 22
25	6 26	7 41	11 55	25	7 23	8 16	oM. 22
26	6 28	8 38	13 15	26	7 25	9 8	1 39
27	6 30	9 28	oM. 15	27	7 27	9 57	2 55
28	6 32	10 19	2 34	28	7 29	10 46	4 10
29	6 34	11 10	3 50	29	7 31	11 35	D Rise
30	6 36	12 1	D Rise	30	7 33	12 24	3 41
				31	7 35	0 24	4 19

# November.

## Day-Break.

1 day 5 h. 33'. 6 day 5 h. 38'. 11 day 5 h. 45'. 16 day 5 h. 49'. 21 day 5 h. 53'. 26 day 5 h. 56'.

	☉	☽	☽
	Rise.	South.	Ri.&Set
1	7 36	1 M. 13	4 59
2	7 38	2 7	5 52
3	7 40	2 54	6 48
4	7 41	3 41	7 53
5	7 43	4 28	8 54
6	7 44	5 15	10 0
7	7 45	6 2	11 4
8	7 46	6 45	12 19
9	7 47	7 28	o M. 19
10	7 49	8 11	1 15
11	7 50	8 54	2 29
12	7 52	9 39	3 42
13	7 53	10 36	4 55
14	7 54	11 34	6 8
15	7 55	12 32	D Sets
16	7 57	1 A. 32	4 53
17	7 58	2 27	6 9
18	7 59	3 22	7 30
19	8 0	4 17	8 48
20	8 1	5 12	10 7
21	8 2	6 7	11 21
22	8 3	6 56	12 38
23	8 4	7 45	o M. 38
24	8 5	8 34	1 51
25	8 6	9 24	2 59
26	8 7	10 14	4 11
27	8 7	11 2	5 18
28	8 8	11 50	6 22
29	8 8	12 39	D Rises
30	8 9	o M. 39	4 24

# December.

## Day-Break.

1 day 5 h. 58'. 6 day 6 h. 1'. 11 day 6 h. 2'. 16 day 6 h. 1'. 21 day 5 h. 59'. 26 day 5 h. 56'.

	☉	☽	☽
	Rise.	South.	Ri.&Set
1	8 9	1 M. 26	5 31
2	8 10	2 17	6 31
3	8 10	3 0	7 33
4	8 11	3 43	8 40
5	8 11	4 26	9 46
6	8 12	5 10	10 51
7	8 12	5 54	11 59
8	8 12	6 43	12 7
9	8 12	7 32	o M. 7
10	8 12	8 21	2 22
11	8 13	9 11	3 33
12	8 12	10 1	4 46
13	8 12	11 2	5 57
14	8 12	12 3	D Sets
15	8 12	1 A. 4	4 49
16	8 12	2 5	6 7
17	8 11	2 56	7 34
18	8 10	3 47	8 53
19	8 10	4 38	10 10
20	8 9	5 29	11 24
21	8 9	6 23	12 36
22	8 8	7 10	o M. 36
23	8 8	7 57	1 38
24	8 7	8 45	2 55
25	8 7	9 33	4 2
26	8 6	10 21	4 54
27	8 6	11 8	5 41
28	8 5	11 56	6 24
29	8 4	12 44	D Rise
30	8 3	o M. 44	5 21
31	8 2	1 31	6 18

1677.

The Suns Right Ascension in time for every  
Day at Noon.

	January			February			March			April			May			June		
	h.	'		h.	'		h.	'		h.	'		h.	'		h.	'	
31	1	19	35	21	41	23	28			1	21	3	14			5	21	
31	2	19	39	21	45	23	31			1	25	3	18			5	25	
33	3	19	43	21	49	23	35			1	29	3	22			5	29	
40	4	19	47	21	53	23	39			1	32	3	26			5	34	
46	5	19	52	21	57	23	42			1	36	3	30			5	38	
52	6	19	56	22	0	23	46			1	40	3	34			5	42	
59	7	20	0	22	4	23	50			1	44	3	38			5	46	
7	8	20	4	22	8	23	55			1	48	3	42			5	49	
7	9	20	9	22	12	23	59			1	51	3	47			5	53	
22	10	20	13	22	16	0	2			1	55	3	51			6	58	
33	11	20	17	22	20	0	5			1	59	3	55			6	2	
46	12	20	21	22	23	0	8			2	3	3	59			6	6	
57	13	20	25	22	27	0	11			2	7	4	4			6	10	
Sets	14	20	29	22	31	0	15			2	11	4	8			6	15	
49	15	20	33	22	34	0	18			2	14	4	12			6	19	
7	16	20	37	22	39	0	22			2	18	4	16			6	24	
34	17	20	41	22	42	0	26			2	22	4	20			6	27	
53	18	20	46	22	46	0	29			2	26	4	25			6	31	
10	19	20	50	22	50	0	33			2	30	4	28			6	35	
24	20	20	54	22	53	0	37			2	34	4	31			6	39	
36	21	20	58	22	57	0	40			2	37	4	34			6	43	
36	22	21	2	23	1	0	44			2	40	4	37			6	48	
38	23	21	6	23	5	0	48			2	43	4	41			6	52	
55	24	21	10	23	8	0	51			2	46	4	45			6	56	
2	25	21	14	23	12	0	55			2	50	4	50			7	1	
54	26	21	18	23	16	0	59			2	54	4	54			7	5	
41	27	21	22	23	19	1	2			2	58	4	59			7	9	
24	28	21	26	23	23	1	6			3	2	5	3			7	13	
life	29	21	30	23		1	10			3	6	5	8			7	17	
21	30	21	33	23		1	14			3	10	5	12			7	20	
18	31	21	37	23		1	17					5	16					



1677.

The Suns Right Ascension in time for every  
Day at Noon.

	July			August			Septemb.			October			Novemb.			Decemb.		
	h. ' "			h. ' "			h. ' "			h. ' "			h. ' "			h. ' "		
1	7	24		9	26	11	19	13	10	15	10	17	16					
2	7	28		9	30	11	23	13	14	15	14	17	21					
3	7	32		9	33	11	27	13	17	15	18	17	25					
4	7	35		9	37	11	30	13	21	15	22	17	29					
5	7	39		9	41	11	34	13	25	15	26	17	34					
6	7	43		9	45	11	38	13	29	15	30	17	38					
7	7	47		9	49	11	41	13	32	15	34	17	42					
8	7	52		9	53	11	45	13	36	15	39	17	47					
9	7	56		9	57	11	49	13	40	15	43	17	51					
10	8	0		10	1	11	52	13	44	15	47	17	55					
11	8	4		10	4	11	56	13	48	15	51	18	0					
12	8	9		10	8	12	0	13	51	15	55	18	5					
13	8	13		10	12	12	3	13	55	15	59	18	9					
14	8	17		10	16	12	7	13	58	16	4	18	14					
15	8	21		10	20	12	11	14	2	16	8	18	18					
16	8	25		10	23	12	14	14	5	16	12	18	23					
17	8	29		10	26	12	18	14	9	16	16	18	27					
18	8	33		10	29	12	22	14	13	16	20	18	31					
19	8	37		10	32	12	25	14	18	16	25	18	36					
20	8	41		10	35	12	29	14	21	16	29	18	41					
21	8	46		10	40	12	33	14	26	16	33	18	46					
22	8	49		10	44	12	37	14	30	16	37	18	49					
23	8	52		10	48	12	40	14	34	16	42	18	54					
24	8	55		10	51	12	44	14	38	16	46	18	58					
25	8	58		10	54	12	48	14	44	16	50	19	2					
26	9	2		10	58	12	51	14	46	16	55	19	7					
27	9	6		11	2	12	55	14	50	16	59	19	12					
28	9	10		11	5	12	59	14	54	17	3	19	17					
29	9	14		11	8	13	2	14	58	17	8	19	21					
30	9	18		11	12	13	6	15	2	17	12	19	25					
31	9	22		11	16			15	6		19	29						



Number	Names of the Stars.	Magnitu.	Right Ascen.		Semidiurn. Arch.	
			h.	m.	h.	m.
1	Andromeda's Head	2	0	52	9	51
2	Medusa's Head	3	2	47		
3	Persens right side	2	3	16		
4	Brightest of the Pleiades	3	3	28	8	18
5	Bulls Eye	1	4	17	7	26
6	Orions left foot	1	4	59	5	6
7	Middle of Orions Girdle	2	5	20	4	10
8	Orions Right shoulder	2	5	28	6	37
9	The Wagoner <i>Auviga</i>	2	4	52		
10	Great Dog <i>Sirius</i>	1	6	31	4	28
11	<i>Castor</i> in <i>Gemini</i>	2	7	14	9	38
12	Little Dog <i>Procion</i>	1	7	22	5	23
13	<i>Pollux</i> in <i>Gemini</i>	2	7	25	9	2
14	<i>Hydra's</i> Heart	1	9	11	5	24
15	Lions Heart	1	9	51	7	17
16	Great Bears fore Guard	2	10	43		
17	Lions Tail	1	11	32	7	34
18	Virgins Spike	1	13	8	5	11
19	Last in the great Bears Tail	2	13	35		
20	<i>Arcturus</i>	1	14	1	8	1
21	Little Bears fore Guard	2	14	50		
22	Brightest in the Crown	3	15	21	6	50
23	<i>Scorpion's</i> Heart	1	16	16	3	31
24	<i>Hercules</i> Head	3	17	0	7	22
25	The Harp Star <i>Lyra</i>	1	18	26		
26	<i>Vultura Volans</i>	1	19	35	6	40
27	Swans Tail	2	20	30		
28	<i>Pegasus</i> Mouth	3	21	28	6	48
29	<i>Fomahant</i>	1	22	39	2	33
30	<i>Pegasus</i> lower Wing.	2	23	55	7	15

*Use 1.* To find the Suns right Ascension, enter with the Month in the Head; and the day of the Month in the side, in the common Angle you have the Suns Right Ascension that day at Noon, and if at any other time you must make proportion.

*Use 2.* To find the time when any of the Stars in the former Table shall come into the Meridian, subtract the Suns Right Ascension from the Stars Right Ascension (set down in the last Table) the remainder is the time the Star comes into the Meridian.

If the remainder be less than 12 hours, it is before midnight, if more than 12, after.

And if the Stars Right Ascension be less than that of the Sun, add 24. to it.

### Advice concerning Post-Letters from London.

#### On Monday to

France	{	Swedeland,
Spain,		Denmark,
Italy,		Kent,
Germany,		The Downs.
Flanders,		

#### On Tuesday to

Holland,	{	Ireland,
Germany,		Scotland,
Swedeland,		England,
Denmark,		Wales.

#### On Wednesday to

Kent and the Downs.

#### On Thursday to

France,	{	All parts
Spain,		England
Italy,		Scotland.

#### On Friday to

Flanders,	{	Denmark,
Germany,		Holland,
Italy,		Kent,
Swedeland,		Downs.

#### On Saturday to

All parts of England, Wales, Scotland, and Ireland,

Letters are returned from England, Scotland, &c.

On Monday, Wednesday, and Friday.

From Wales every Wednesday and Friday.

Kent and the Downs every day.

er with  
Month  
as Right  
er time

A useful Table to know the true time of the  
Night without any Instrument for the Latitude  
51.32. taken out of my *Matb. Compend.*

Stars Names that Set nor.	Rt. Asc. und. the Po. Star.	Azimuth under the Pole Star
3 <i>Cassiopeias</i> Hip	12 38	00 1 E
3 In her Knee	13 8	30 30 E
2 In <i>Perseus</i> Right side	15 16	15 2 21 E
4 Great Bears Lip	20 12	31 43 E
3 In his left Knee	21 16	12 1 51 E
2 Lower in <i>Charles</i> Wain	22 53	11 1 34 E
2 Upper in the Wain	22 56	12 1 29 E
2 The lower in <i>Quartile</i>	23 43	60 57 E
2 The upper	0 22	20 35 E
2 The Rump <i>Aliet</i>	0 39	00 2 W
2 In the Tail <i>Penult.</i>	1 7	40 25 W
2 The last in the Tail	1 19	60 55 W
2 Last turn in <i>Draco</i>	1 48	110 14 W
2 Upper Guard	1 25	26 2 2 W
2 Lower Guard	2 59	27 2 20 W
2 Bright Star in <i>Draco's</i> Head	5 25	33 43
3 Upper turn in <i>Draco</i>	6 38	35 3 51
3 <i>Cepheus</i> left Shoulder	8 43	27 3 10
3 In his Girdle	8 55	25 3 5
3 In his right Knee	11 10	17 1 22
3 In <i>Cassiopeias</i> Chair	11 41	100 48
3 In her Breast	12 21	10 15

### The use.

IN the first Column this Table has the Names and  
Magnitudes of the most noted Stars that never Rise  
or Set in our Horizon. The second Column gives the  
Right Ascension in time when those Stars come under  
the Pole Star. The third Column gives the coming  
of those Stars under the Pole Star, and the Pole it self.  
The fourth Column gives the Azimuth or distance in  
degrees or minutes from the true Meridian that each

### *The Use of the Tables.*

Star will make, when it comes under the Pole Star, and whether on the East or West side of the Meridian.

1. To find the true time of the night, you must observe by some perpendicular corner of a House, or by a string hung up with a great weight, when any of the Stars in the Table come directly into the perpendicular, together with the Pole Star, then if you subtract the Suns right Ascension out of the Stars right Ascension, at its coming under the Pole Star found in the Table (adding 24 hours if need be) the remainder is the true time of the night.

The second column shews the minutes of an hour that is spent betwixt any of the Stars coming under the Pole Star, and the Pole it self; therefore if by a minute Watch or *Pendulum*, you observe that time (in those which come under the Pole Star before the Pole) at that instant; if you place another perpendicular string behind the former, so as both intersect the Star, these two perpendiculars are in the Meridian Line, and will be the exactest way that can be found for the describing a Meridian.

The third Column shews the Azimuth or distance upon the Horizon from the North part of the Meridian, East or West (as E and W signifie) that any of the Stars in the Table makes with the said Meridian: therefore at the instant when the Star comes under the Pole Star, if you place a perpendicular (as in the last) in a straight Line with the former perpendicular Star, and the Pole Star, it shews a Line so far from the true Meridian as the Table gives degrees and minutes, East or West, which set accordingly from the found line, gives the true Meridian. And note that the Rump or Alias of the Great Bear comes under the Pole Star, within two minutes of a degree in the Azimuth, or less than the sixth part of a minute in time with the Pole Star; therefore when ever you find that Star under or over the Pole Star, it is in the Meridian without sensible error.

4. By the distance in time betwixt one Star and another coming under the Pole Star, Hour-glasses, or time for

### *The Use of the Tables.*

for trial of the exact going of Watches or Clocks may be observed : as for example, it will be found just two hours betwixt the last but one, and the last of the Stars in the Great Bears Tail under the Pole Star; as appears by the Table, the one coming under the Pole Star at 3 hours, 40'. the other at 5 h. 40'.

*The use of the Table of Equations, which is the last Column of the right hand Page of each Month.*

THE Sun not moving equally (for several reasons demonstrated by Mr. Flamsted) if the Clock or Watch go exactly true, yet by a Sun-dial tried, it will differ each day so many seconds of time as this Table amounts unto. If you observe the Table, you will find four days marked with Asterisks, viz. 20. of February, 25. of May, the 5th. of August, and the 11th. of November, when the day is equal, and no equation: other days have their Equations, which must be added or subtracted to or from the last days time, as in these Examples, and according to what the Table directs, by addition and subtraction.

#### *1 Example.*

The 15th. day of March the Clock and Sun-dial are both together at 12 a Clock, or any other hour; the next day at 12 a Clock, the Watch will be 16 seconds before the Sun, because the Table bids subtract 16". so if you should let the Watch alone 7 days, it would be 1'. 54". before the Sun.

#### *2 Example.*

The 15th. of May, suppose the Sun and Watch together at 12, and a month after I would know how they should agree: from the 15 to the 25th. there are 19". to be subtracted; and the 15th. of June, adding each days Equation, there are 112". then taking 19". out of 112". rests 93". which makes the Watch 1'. 33". behind the Sun.

## Of the Eclipses of the Year, 1677.

**T**Hough the Luminaries be each twice Eclipsed this Year, yet we in *England* shall only behold the first defect which is of the Moon: after the midnight following the 6. of *May*, or according to the vulgar account on the 7. in the morning, of which the principal phases are thus computed from Mr. *Flamsted's* Tables.

The apparent time of the  $\odot$  in the Orbite, *May* the 6. day, 15 h. 35'. 17". *post merid.* and then,

	s.	o	'	"
The Suns mean motion	1	25	23	18
The Moons	7	29	38	51
The Argumentum Amum	10	21	6	17
The Excentricity			57693	
The Suns true place $\odot$		26	38	38
The Node equated	8	4	26	23
The Inclination of the Orbite		5	17	32
The Reduction			1	58
$\odot$ s Horizontal Parallax		60	10	
$\odot$ s 10". their sum		60	20	
$\odot$ s true Semidiameter		15	54	
Semidiameter of the shadow		44	26	
$\odot$ s Semidiameter		16	35 $\frac{1}{2}$	
Their sum		61	1 $\frac{1}{2}$	
$\odot$ s Latitude North subtract		43	2	
Parts deficient		17	59	
$\odot$ s true horary motion 37'. 22". $\odot$ s 2'. 24". $\odot$		34	58	
Scruples of Semiduration		43	15	
Time of Semiduration	1 <sup>b</sup>	14	19	
Time of Reduction		1	58	

There-

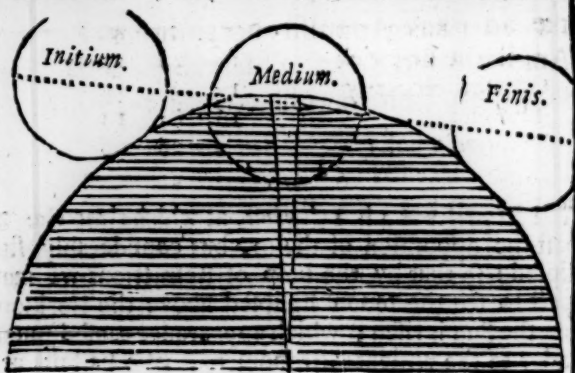
Therefore	h.	'	"
The beginning	14	24	40
☿ in the Ecliptick	15	32	15
Greatest obscurity	15	38	59
The end	16	57	14
Duration wholly	2	28	38
Digits darkened	6 <sup>d</sup> .	30'.	

The Sun rises at 4 h. 15'. *mane*, at which time the ☽ is past the opposition of the ☉, but considerably still Eclipsed: so that by the help of Refractions we may expect to see the Moon Eclipsed above the Horizon, when the Sun is risen; which appearance caused much wonder to the ancient Astronomers, who had not attained to the perfect knowledge of Refractions.

The next Eclipse is of the Sun, on the 21. of *May* in the morning, which begins as the Sun rises in the Ethiopick Ocean, between the Isles of *Martin*, *Var*, and *St. Helena*, will be total in many parts of *Africk*, betwixt the Equator and the Southern Tropick, and may be visible in most parts of the *East-Indies*.

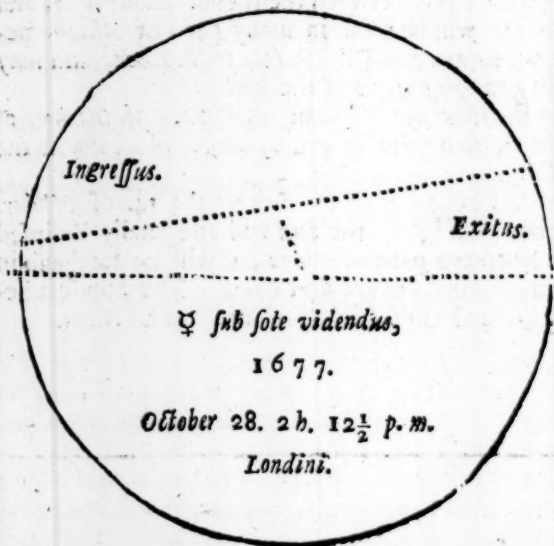
The third is of the Moon on the 30. of *October*, at our Noon, so only to be seen by those who inhabit the opposite side of our Globe.

The last Eclipse is of the Sun on the 14. of *October*, about our midnight, the Sun will rise totally Eclipsed in the Northern parts of *China*, it will be total also in the Sea betwixt *America* and *China*. The Sun sets beginning to be Eclipsed in *America* in new *Granada*.



*Eclipsis Lunæ, May 7. mane*

*1677.*



*☾ sub sole videndus,*

*1677.*

*October 28. 2 h. 12½ p. m.*

*Londini.*



Lunæ ad fixas Appulsus notabiliores Londini  
Angliæ Anno 1677. observabiles ab Heckeri  
doctissimi Ephemeridibus deducti ab J. F.

1677.

- Januarii 2. 13 h. 4', p. m. D in  $\gamma$   $13^{\circ}$ ,  $54'$  latitudo  $2^{\circ}$   
 $8'$ . Bor. fixæ  $2^{\circ}$ .  $35'$  nonagesimus  $\odot$   $29^{\circ}$ ,  $15'$ .  
ergo lunæ occasuræ limbus boreus transit  $43'$  infra  
8am, Arietis lucis quintæ.
- 3 9. 16 Luna in  $\gamma$   $28^{\circ}$ .  $55'$ . latitudo  $1^{\circ}$ .  $18'$ . fixæ  
 $1^{\circ}$ . 12. Bor. nonag.  $\Pi$   $19\frac{1}{2}$  ergo hora 9h.  $30'$ .  
circiter Lunæ limbus superior transit  $5'$  infra vi-  
cesimam quartam Tauri lucis quintæ.
- \* 19 h. 4'. Luna in  $\Pi$   $3^{\circ}$ .  $42'$ . latitudo  $0^{\circ}$ .  $51'$ .  
Bor. fixæ  $0^{\circ}$ .  $35'$ . nonagesimus  $\approx$   $9^{\circ}$   $\frac{1}{2}$  D ergo  
jam ante sesquihoram occiderit ante tamen ejus  
occasum, tanta fuerit limbi ipsius à fixa distantia  
ut commode forsan capi possit.
7. 14 h.  $50'$ . D in  $\odot$   $14^{\circ}$ .  $10'$ . latitudo  $3^{\circ}$ .  $2'$ .  
fixæ  $3^{\circ}$ .  $48'$ . Aust. nonagesimus  $\Omega$   $21^{\circ}$ .  $2\frac{1}{2}$  teget  
ergo Luna vicesimam primam  $\Pi$  orum lucis sextæ  
cujus fiet

h. '

Occultatio 15 10 lat. \* à cent. D  $0^{\circ}$  7' B.

Emersio 16 10 in  $\gamma$

9. 6 h.  $10'$ . D in  $\text{Sh}$   $9^{\circ}$ .  $8'$ . latit. Austr.  $4^{\circ}$ .  $13'$ .  
fixæ  $5^{\circ}$ .  $8'$ . Horoscopus  $\gamma$   $2^{\circ}$ .  $1\frac{1}{2}$  ergo D ori-  
ens fixam prætergressa est è qua tamen limbi sui  
non major distantia quam commode mensurari po-  
test.
12. 11 $^{\circ}$ .  $44'$ . D in  $\text{M}$   $19^{\circ}$ .  $54'$ . latitudo  $5^{\circ}$ .  $2'$  fixæ  
 $5^{\circ}$ .  $41'$ . Aust. nonagesimus  $\odot$   $22\frac{1}{2}$  teget ergo Lu-  
na trig. tertiam Leonis lucis quintæ cujus sub ea

h. '

Immersio 10 15 } latit. à centro }  $0^{\circ}$  4' Au.  
Emersio 11 17 } lunæ in Sinod. }

29. 7 h.

29. 7 h. 26'. D in  $\gamma$  12°. 26'. latit. 2°. 26'. fixæ 1°. 12'. Bor. nonages. II 19°. 12' ergo hora circiter 8  $\frac{1}{2}$  Lunæ limbus Austrinus transit 27'. supra 12am. V lucis sextæ.

Februarii 1 7 h. 10'. D in II 18°. 0'. lat. 0° 36'. fixæ 1°. 20'. Aust. nonages. II 18  $\frac{1}{2}$  ergo Luna jam in ipso nonagesimo versante 41a.  $\gamma$  lucis 6æ. est in recta linea per cornua ducta, & ab inferiori duntaxat scrupulum distans, diligenter igitur attendendum ne forsan brevis fiat fixæ occultatio Di in  $\square$   $\odot$  hor. 11 48. ejusdem noctis D in II 20°. 16'. latit. 0°. 48'. stellæ 2°. 14'. nonages.  $\Omega$  7  $\frac{1}{2}$  ergo hora 1h. 6' mane sequenti limbus inferior Lunæ transit 30' circiter supra 19am  $\gamma$  lucis 3æ.

2 h. 9. 10'. D in  $\mathfrak{D}$  0°. 48'. latit. 1°. 41'. Austr. fixæ 0°. 53'. nonages. II 14°. ergo hora circiter. 9. 40. D limbus superior transit 60'. infra 15am II lucis tertie.

Hor. 12. 15. D in  $\mathfrak{D}$  2°. 18'. lat. 1°. 50'. fixæ 3°. 8'. Aust. nonag.  $\Omega$  20°. ergo hor. 13 h. 30'. mane Luna limbus inferior transit 20'. supra 16am. II lucis 4tæ.

6. 5 h. 40'. D in  $\Omega$  17°. 36. latit. 4°. 48'. fixæ 4°. 36'. nonag II 7°. ergo D centrum in consuetudine 28æ  $\Omega$  scrup. 47'. fixæ centro lunæ borealior scrup. 0°. 18'.

14. h. 6. 50. mane, D in m 28°. 4' lat. 1°. 0'. fixæ 1°. 54'. Aust. nonag.  $\dagger$  8. toget ergo Luna 2am m ii lucis 3æ. h. 6. 25. mane, latit. centri Lunæ \* 0°. 4'. Aust. emissio fit post exortum solis.

17 7 h. 8'. mane D in  $\nu$  10°. 32'. lat. 1°. 27' fixæ 0. 59. Bor. nonag.  $\dagger$  23°. ergo paulo ante  $\odot$  exortum D limbus boreus transit 13'. infra 8am  $\dagger$  lucis 4æ.

27. 10. 0. D in II 3. 42. latit. 0. 24. fixæ 0. 35. nonag.  $\Omega$  6  $\frac{1}{2}$  ergo hora 11  $\frac{1}{2}$  lunæ limbus superior transit 30'. infra 23am  $\gamma$  lucis 4æ.

29. 11 h. 6'. D in II 16°. 6'. latit. 0°. 42'. fixæ 1°. 4'. Aust.

4'. *Aust. nonag*  $\Omega$   $17^{\circ}$ .  $12'$ . ergo post sesquihoram  
*lunæ limbus superior transit*  $2'$ . vel  $3'$ . infra  $40^{\text{am}}$   
 $\propto$  *lucis*  $6tæ$ .

Martii 3. 6 h.  $13'$ .  $\mathcal{D}$  in  $\odot$   $19^{\circ}$ .  $10'$ . *latit.*  $3^{\circ}$ .  $19'$ . *fixæ*  
 $3^{\circ}$ .  $48'$ . *Aust. nonag.*  $\Pi$   $28^{\circ}$ . teget ergo luna  $27^{\text{am}}$   
 $\Pi$  *orum ante solis occasum* *cujus fiet à luna*

*Emersio* 6. 6. p. m.

*Latit. centri*  $\mathcal{D}$   $\star$  in  $\odot$   $0^{\circ}$ .  $0'$ .

5. 13 h.  $6'$ .  $\mathcal{D}$  in  $\Omega$   $17^{\circ}$ .  $5'$ . *lat.*  $4^{\circ}$ .  $43'$ . *fixæ*  $5^{\circ}$ .  
 $43'$  *nonag.*  $\mathcal{S} \mathcal{M}$   $13^{\circ} \frac{1}{2}$  ergo hora 13.  $36'$ . centro  
*Lunæ in eadem cum fixa longitudine versante lim-*  
*bus ejus Austrinus à*  $29^{\circ}$   $\Omega$  *exiguo duntaxat in-*  
*tervallo distabit attendendum tamen ne brevis for-*  
*san fiat stellæ occultatio.*

$\star$  h. 14. 50.  $\mathcal{D}$  in  $\Omega$   $17^{\circ}$ .  $59'$ . *latitudo*  $4^{\circ}$ .  $45'$ .  
*Auß.*  $28a$   $\Omega$  *lucis*  $6tæ$  in  $\Omega$   $17.36$ . *lat.*  $4.48$ .  
*Aust. nonag.*  $\approx$   $6^{\circ}$ . ergo luna jam in eadem longi-  
*tudine cum fixa sitæ limbus boreus ab ea distat.*  $32'$ .

18. 4 h.  $54'$ . mane  $\mathcal{D}$  in  $\approx$   $3^{\circ}$ .  $53'$ . *latit.*  $4^{\circ}$ .  $14'$ .  
*fixæ*  $3^{\circ}$ .  $25'$ . *nonages.* in  $\mathcal{M}$   $28$ . teget ergo luna  
 $10^{\text{am}}$   $\approx$  *lucis*  $6æ$  ante solis ortum *cujus*  
 h. '.

*Occultatio* 5. 34.

*Emersio de die.*

*Lat. cent.*  $\mathcal{D}$  in  $\odot$   $0.7$ . *Bor.*

25. 8 h.  $10'$ .  $\mathcal{D}$  in  $\odot$  14 h.  $19'$  *lat.*  $1^{\circ}$ .  $40'$ . *fixæ*  
 $1^{\circ}$ .  $48'$ . *Bor. nonag.*  $\Omega$   $3^{\circ}$ . ergo hora 9 h.  $40'$ .  
*lunæ occasuræ limbus boreus à*  $9a$   $\vee$  *tis distat.*  
 $30'$ . *circiter.*

30. 14 h.  $20'$ .  $\mathcal{D}$  in  $\odot$   $19^{\circ}$ .  $10'$ . *latit.*  $3.32$ . *fixæ*  
 $3^{\circ}$ .  $48'$ . *Aust. nonag.*  $\approx$   $22^{\circ}$ . *Lunæ ergo descen-*  
*dentis limbus boreus transit*  $23'$ . infra  $27^{\text{am}}$   
 $\Pi$  *orum lucis*  $6tæ$ .

Aprilis 1. 11 h.  $14'$ .  $\mathcal{D}$  in  $\Omega$   $11.40$ . *latit.*  $4^{\circ}$ .  $43'$ . *fixæ*  
 $5^{\circ}$ .  $36'$ . *Aust. nonag.*  $\mathcal{M}$   $10^{\circ} \frac{1}{2}$  teget ergo Luna  
 $13^{\text{am}}$   $\odot$  *lucis*  $5tæ$  subea

*Occultatio* 11 22 } *lat. centri*  $\mathcal{D}$  a  $\star$  a in

*Emersio* 12 20 } *synodo*  $0.5'$ . *Bo.*

4. 11 h.

4. 11 h. 28'. D in  $\text{M}$  19. 54. latit. 5°. 0'. fixæ  
5°. 41'. nonag.  $\text{M}$  15  $\frac{1}{2}$  teget ergo Luna 33am  
 $\text{M}$  lucis 6tæ cujus sub ea

Immersio 11 0

Emerfio 12 3

Lat. centri D a \* in  $\text{G}$  0°. 5'. Aust.

8. 13 h. 8'. D in  $\text{M}$  16°. 21'. latit. 1°. 39'. fixæ  
1°. 48'. Aust. nonag.  $\approx$  11. ergo hora 12. 40 lu-  
næ limbus boreus transfit 24' infra 18am  $\approx$  lucis  
3æ.

24. 6 h. 42'. D in  $\text{II}$  18°. 0'. latit. 1°. 11'. fixæ  
1°. 20'. Aust. nonag.  $\Omega$  7. ergo hora 8 h.  
50'. lunæ limbus boreus transfit 32'. infra 4iam  
 $\text{G}$  i lucis 6tæ.

Maii 15. 3 h. 58'. mane D a in  $\text{X}$  22°. 9'. latitudo 5°. 2'.  
fixæ 3. 25. bor. nonag.  $\text{X}$  2. 20. ergo hora 4. 48.  
D a limbus inferior transfit 26'. infra 7.  $\text{X}$  lu-  
cis 5æ.

19. 3 h. 6'. mane D in  $\text{G}$  12°. 26. lat. Bor. 2°. 0'.  
fixæ 1°. 12'. nonag.  $\text{V}$  23. luna ergo teget 12am  
 $\text{V}$  tis lucis 6æ sub horizonte quam  
h. '

Reteget orta 3 0

Lat. cent. D a \* a in  $\text{G}$  0 7 Aust.

Junii 1. circa mediam noctem sequentem luna tegeret 28am  
& 29am Ophiuchi & deinde transiret infra 30am  
sitales in cælis extarent stellæ, ego tamen nun-  
quam fixas in locis hisce assignatis reperire potui,  
nec unquam extitisse credo siquidem iisdem Keple-  
rus adscripsit. Desunt in meo Catalogo. .

7. 13 h. 5'. D in  $\approx$  3°. 53'. lat. 4. 28. fixæ 3°. 2'.  
Bor. nenag.  $\approx$  0. 15. teget ergo D. 9am  $\text{V}$   
fietque fixæ lucis 6tæ

Ocultatio 11 41 lat. centri D 0 1

Emerfio 13 13 a \* in  $\text{G}$  0 61 Bor.

10. 4 h. 30'. mane D in  $\text{X}$  4°. 52'. lat. 5. 13'. fixæ  
4°. 8'. Bor. nonag.  $\text{V}$  8. 32. ergo hora 5. mane

10. limbus superior lunæ transfit 2'. supra \* am sed  
cum

cum Sol jam ascenderit, in observabilis erit D a ad fixam appropinquatio proxima, cujus tamen a limbo lune distantia commode satis aut horam tertiam, capi possint.

11. 4 h. 5'. mane D in  $\times$   $13^{\circ} 25'$ . latit.  $5^{\circ} 8'$  fixæ 4. 27. Bor. nonag.  $\vee$  4. ergo paulo post 2am mane distantia limbi lune a quinta  $\times$  um lucis quinta facile metiri licet post ortum solis D a fixam teget in boreali limbi sui hemecyclo.

22. h 8. 12'. D in  $\Omega$   $11^{\circ} 40'$ . latit.  $4^{\circ} 47'$ . fixæ  $5^{\circ} 36'$ . nonag.  $\approx$  11. teget ergo D a 13am lucis 5æ cujus evenit.

Occultatio 8 26

Emergio 9 27

Lat. centri D a a  $\star$  in  $\odot$  2 Bor.

Julii 3. 12. 50. D in  $\vee$   $11. 47'$ . latit.  $3^{\circ} 5'$ . fixæ  $1^{\circ} 31'$ . Bor. nonag.  $\times$  8. ergo hora 13. 12. lune limbus Aust. transit 26 min. supra 9am  $\dagger$  lucis 4æ.

5. 12 h. 20' D in  $\approx$   $11^{\circ} 55'$ . lat.  $4^{\circ} 44'$ . fixæ  $4^{\circ} 50'$ . nonages.  $\times$  i, ergo hora 12. 36' D limbus boreus transit 45'. infra stellam lucis 5æ.

12. 12. 50. D in  $\vee$   $22^{\circ} 20'$ . lat.  $3^{\circ} 21'$ . fixæ  $1^{\circ} 21'$  Bor. nonages.  $\times$  16. ergo hora 12. 22. lune limbus Aust. transit 23. supra 21am  $\vee$  lucis 5æ.

Eadem nocte bor. 14 h. 35'. D in  $\vee$   $23^{\circ} 16'$  latit.  $3. 15$ . fixæ  $1^{\circ} 38$ . Bor. nonag.  $\vee$  11. ergo hora 14. 23. lune limbus inferior transit 35' supra 20am  $\vee$  lucis 5æ.

14. 5 h. 1. mane D in  $\Pi$   $1^{\circ} 32'$ . lat.  $0. 7$ . Bor. fixæ  $0^{\circ} 46'$ . Aust. nonag.  $\oslash$   $10 \frac{1}{3}$  ergo hora 4h. 0'. D a limbus orientalis in eadem longitudine. cum fixa ab ea distabit non plus 6'. vel 7'.

14. 14. h. 15'. p. m. D in  $\Pi$   $12^{\circ} 8$ . latit.  $0. 45'$ . fixæ 1. 49. Austr. non  $\vee$  10. teget ergo 18am  $\oslash$  i lucis 4æ sub horizonte quam orta reteget 13. 30.

Lat. centri D a  $\star$  in  $\odot$  13'. Bor.

August. 1. 10 h. 20'. D in  $\approx$  3°. 53'. lat. 4°. 25'. fixe  
3. 25. Bor. nonag.  $\approx$  0  $\frac{1}{2}$  teget ergo Luna 9am  
lucis 6æ cujus sub ea

h.

Ingressus 10 5

Emersio 10 58

Lat. centri D æ à \* in  $\phi$  0 5 Bor.

2. 13 h. 35'. D in  $\approx$  20°. 58. lat. 4°. 55'. fixe  
4°. 17'. Bor. nonag.  $\vee$  16  $\frac{3}{4}$  luna ergo jam vi-  
debitur 32' in antecedentiæ 28  $\vee$  lucis 6æ cujus  
occultatio non fit nisi post occasum Lune.

3. 12. h. 2'. D in  $\times$  4°. 56'. lat. 4°. 58'. fixe  
4° 8'. Bor. nonag.  $\times$  28. teget ergo D a 22am  
 $\approx$  lucis 4æ cujus

h.

Ingressus 11 56

Emersio 12 57

Lat. cent. D æ à \* a in  $\phi$  0. 2'. Bor.

11. 13 h. 23'.  $\bigcirc$  in  $\Pi$  20°. 17'. lat. 1°. 43'. fixe  
2. 14. Auf. nonag.  $\vee$  15  $\bigcirc$  ergo jam recens orta  
apparet 33 min. in conseq. 19  $\phi$  i lucis 3æ. in  
latit Australiori 15'.

23. 7 h. 20'.  $\bigcirc$  in  $\Pi$  16°. 21'. lat. 1°. 5'. fixe 1.  
48. Auf. nonag.  $\vee$  5°. teget ergo  $\bigcirc$  a 18am  $\approx$   
lucis 3æ cujus

h.

Immersio 7 25

Emersio 8 0

Lat. cent. D æ à \* in  $\phi$  0 1'. Bor.

27. 10 h. 35'. D in  $\vee$  13°. 48'. lat. 3°. 36'. fixe  
3°. 6'. nonag.  $\times$  28. ergo hora 12. 20. lune oc-  
casuræ limbus boreus à \* a distat 5'.

Sept. 2. 8 h. 30'. D in  $\vee$  9. 40. latit. 3°. 44'. fixe 2°. 11'. Bor. nonag.  $\approx$  28. ergo hora 8. 4. D æ lim-  
bus Austrinus transit 23'. supra \* am

3. 8 h. 20'. D in  $\vee$  23°. 16'. lat. 1°. 50'. fixe  
1°. 38'. Bor. nona.  $\approx$  25  $\frac{1}{2}$  ergo 7 h. 44'. D æ lim-  
bus boreus ibit 28'. infra 20am  $\vee$  tis lucis 5æ.

5. 4 h.

5. 4 h. 0'. mane D a in  $\gamma$  10°. 39'. lat. 1°. 26'.  
fixæ 1°. 7' Bor. nonag. II 4°  $\frac{1}{3}$  teget ego luna  
13am  $\vee$  lucis 6æ cujus sub ea

Occultatio 4 20

Emerfio 5 0

Lat. cent. D æ à \* in  $\gamma$  0 11 Bor.

8. 4h. 21'. mane D in II 18. 0. lat. 1. 47. fixæ  
1. 20. Auf. nonages. II 10. ergo hora 4. 55. D æ  
limbus boreus transit 42'. infra 40am  $\gamma$  lucis 6æ.  
12. 15h. 24'. D in  $\Omega$  17. 5. lat. 5. 0. fixæ 5°. 43'.  
Auf. nonag. II 2 ergo hora 13 44. limbus infe-  
rior lunæ transit 0'. supra 29am  $\Omega$  is lucis 5æ di-  
ligenter attendendum ne forte fiat ejus occultatio.  
Dainceps eadem nocte post unam horam lunæ lim-  
bus boreus transit 28'. infra 28am.  $\Omega$  s lucis 6æ.  
23. 8h. 25'. D in  $\vee$  9. 0'. lat. 3. 30. fixæ 1°. 44'.  
Bor. nonag.  $\times$  19. ergo hora 9h. 20'. D æ limbus  
Auf. transit 38'. supra 7am  $\dagger$  ii lucis 4æ.  
26. 7h. 20'. D in  $\approx$  20°. 58'. lat. 5°. 8'. fixæ 4.  
17. nonag.  $\times$  4°. teget ergo luna 28am  $\vee$  lucis  
6æ cujus accidet

h '

Occultatio 7 13

Emerfio 8 5

Lat. centri D æ à \* in  $\gamma$  0 4' Auf.

27. 6h. 52'. D in  $\times$  4. 56. lat. 5. 6. Bor. fixæ 4. 8.  
nonag.  $\approx$  25°. teget ergo luna 22am  $\approx$  lucis 4æ  
cujus eveniat

h '

Occultatio 6 16

Emerfio 7 15

Lat. centri lunæ à \* a in  $\gamma$  0 2 Bor.

28. 5h. 55'. D a in  $\gamma$  18°. 25'. lat. 4°. 45'. fixæ  
4. 27. Bor. non.  $\approx$  0. 40. ergo hora 5. 30. circa  
Solis occasum lunæ limbus superior transit 24'. in-  
fra 5am  $\times$  lucis 5æ.

- Octob. 2. 4h. 24'. mane D in  $\vee$  22°. 20' lat. 2°. 51'.  
fixæ 1°. 51'. Bor. nonag. II 25. ergo hora 5h. 54'.

Ne

mare lunæ limbus inferior transit 17'. supra 21am  
 Xium lucis 5æ.

4. 4h. 42'. mare D in  $\Pi$  1°. 32'. lat. 0. 32'. fixæ  
 0. 45'. Aust. nonag.  $\odot$  0°. 0'. ergo hora 6. mare  
 D æ limbus boreus transit 2'. infra 25am & lucis  
 6ta.

4. 13h. 10' p.m. D in  $\Pi$  12°. 8'. lat. 1°. 27' fixæ  
 1°. 49'. Aust. nonag. & 23. occultabit ergo D  
 18am  $\Pi$  oram lucis 4ta eritque \*æ  
 h.

Occultatio 12 26

Retellio 12 55

Lat. centri lunæ à \* in  $\odot$  13. Aust.

5. 13h. 0'. D in  $\Pi$  24. 13. lat. 2. 30. fixæ 3°. 12'.  
 Aust. nonag. & 22  $\frac{2}{3}$  abscondet ergo D 13am  
 Orionis lucis 5æ cuius sub ea  
 h.

Ingressus 11 47

Emerfio 12 38

Lat. centri D à \* in  $\odot$  0 0 Bor.

Deinceps eadem nocte bor. 17. 22. D in  $\Pi$  26.  
 25. lat. 2. 40. nonag.  $\odot$  8  $\frac{1}{2}$  occultabit ergo D  
 14am Orionis lucis 5æ fietque  
 h.

Occultatio 17 22

Egressus 18 10

Lat. centri D à \* in  $\odot$  0 10. Bor.

7 15h. 20'. D in  $\odot$  19°. 10'. lat. 4°. 12'. fixæ 3°. 48'.  
 Aust. nonag.  $\Pi$  18. ergo hora 14h. 20'. lunæ lim-  
 bus inferior transit 40' infra 27am  $\Pi$  um lucis 6ta.

9. 12h. 50'. D in  $\Omega$  11. 40. lat. 5. 5: Aust. fixæ  
 5. 36. nonag. & 23  $\frac{1}{2}$  oriens ergo luna fixam di-  
 seruit quam sub horizonte texerat è qua tamen ejus  
 distantia percommode capi potest.

12. 15h. 38'. D in  $\mathbb{M}$  1°. 54. lat. 4°. 47'. fixæ 5°. 41'.  
 Aust. nonag.  $\Pi$  27. ergo hora 14. 10. D  
 limbus inferior transit 9' supra 33am  $\Omega$  s lucis 5ta

22. 7h. 30'. D in  $\mathbb{M}$  3. 35. lat. 4. 51. fixæ 3. 29



Bor. nonag.  $\vee$  3. ergo hora  $8\frac{1}{2}$  lune limbus superius transit 26'. supra 9am  $\vee$  lucis 6ta.

25. 12h 31'. D in  $\times$  i 8. 26. lat. 4. 52. fixa 4. 27. Bor. nonag.  $\Pi$  1.0 D a ergo descendentis distantia capi possit a 5a  $\times$  um lucis 5a quum sub horizonte tectura est.

29. 10h. 10' D in  $\delta$  10. 40. lat. 1. 51. fixa 1°. 7'. Bor. nonag.  $\delta$  9. 0. ergo D in nonag. limbus superior transit 6. infra 13.  $\vee$  lucis 6ta.

Novem. 1. 13h. 30'. D in  $\Pi$  20. 16. lat. 2. 12. fixa 2. 14.

Aust. nonag.  $\Pi$  16. ergo hora 13. 26. D a limbus superior transit 13 infra 19am  $\delta$  lucis 3a.

2. 13°. 22'.  $\circ$  in  $\odot$  2. 18. lat. 3. 10 fixa 3. 8.

Aust. nonag.  $\Pi$  29. ergo hora 13. 17. D limbus superior transit 17' infra 16am  $\Pi$  um lucis 4a.

6. 8h. 42'. D in  $\Omega$  17. 36. lat. 5. 15. fixa 4. 48.

Aust. nonag.  $\odot$  29. ergo hora 8. 20. lune limbus boreus transit 53'. infra 28am  $\Omega$  lucis 6a.

17. 5h. 25'. D in  $\vee$  13. 48. lat. 3. 55. fixa 3. 6.

Bor. nonag.  $\times$  28°. 40'. abscondet ergo luna fixam cuius fiet

h . .

Occultatio 5 41

Emergio 6 37

Lat. centri D a  $\times$  in  $\delta$  0 3 Austr.

23. 7h. 40'. D in  $\vee$  9. 40. lat. 3 50. fixa 2. 11.

Bor. nonag.  $\vee$  14. ergo hora 7. 42. D a limbus inferior transit 23'. infra 11am  $\times$  lucis 4a.

26. 4h. 48'. men.  $\circ$  in  $\delta$  10. 39. lat. 1. 20. fixa

1. 7. Bor. nonag.  $\delta$  27  $\frac{1}{4}$  ergo hora 5. 5.  $\circ$  limbus boreus transit 4'. infra 13am  $\vee$  tis lucis 6ta.

27. 8h. 26'.  $\circ$  in  $\Pi$  1. 28. lat. 0. 33. Aust. fixa 0.

46. nonag.  $\delta$  12. ergo hora 8. 4. limbus lune boreus transit 9'. infra 25am  $\delta$  lucis 6ta.

29. 9h. 20'.  $\circ$  in  $\Pi$  26. 25. lat. 2. 42. fixa 3. 21.

Aust. nonag.  $\delta$  23. abscondet ergo  $\circ$  a 14am. Orionis fietque

h

Occultatio 7 54

Emerſio 8 55

Lat. centri  $\Delta$   $\ast$  in  $\odot$  6 Bor.

Decem. 3. 14h. 54'.  $\Delta$  in  $\Omega$  17°. 6. lat. 5°. 10'. fixæ 5°. 43'. Auf. nonag.  $\odot$  25. abscondet ergo  $\Delta$  a 29am  
 $\Omega$ is lucis 5ta ejusque eveniet

h.

Occultatio 14 55

Emerſio 16 1

Lat centri  $\Delta$   $\ast$  in  $\odot$  0 0

21. 12h. 10'.  $\Delta$  in  $\Upsilon$  22°. 20'. lat. 2°. 45'. fixæ 1°. 51'. nonag.  $\odot$  27. ergo hora circiter 11h. 10'.  
 $\Delta$  limbus boreus transit 6'. supra 22am  $\times$  lucis 4ta.

Deinceps eadem nocte hora 13. 55  $\Delta$  in  $\Upsilon$  23. 16. lat. 2. 40. fixæ 1. 38½ Bor. nonag. II 15. ergo hora 15. 25  $\Delta$  limbus inferior transit 15'. supra 20am  $\times$  lucis 5ta.

25. 11h. 20'.  $\Delta$  in  $\odot$  12°. 8'. lat. 1°. 33'. fixæ 1°. 49'. nonag.  $\odot$  5¼ ergo hora 12. 50.  $\Delta$  limbus boreus fere tangit 12am  $\Upsilon$  lucis 6ta diligenter attendendum ne forte fiat occultatio.

26. 11h. 16'.  $\Delta$  in II 24. 13 lat. 2 32. fixæ 3. 12. Auf. nonag.  $\odot$  20. ergo  $\Delta$  a abscondet 13am  
 Orionis lucis 5ta eveniet

h.

Occultatio 9 45

Emerſio 10 48

Lat. cent.  $\Delta$   $\ast$  in  $\odot$  0 6 Bor.

28. 13h 10'.  $\Delta$  in  $\odot$  19°. 10'. lat. 4. 9. fixæ 3. 48. Auf. nonag.  $\odot$  26. 26 ergo hora 13. 20.  
 $\Delta$  limbus superior transit 36'. infra 27. II orum  
 lucis 6ta.

Reliquorum quinq; Planetarum ad fixas Ap-  
 pulsus ab eodem Ephemeride deducti: ad  
 Annum, 1677. ab J.F.

1677. Mensis & dies.	hora	Plan.	Loca.	Latitu.	Long. a fixis.	Latitu.
<i>Janna.</i> 5	6 M	♀ ♄	15 32	1 56 B	27C 26O.	0 20 A
					5C 14O.	0 16 A
	6 6 M	♀ ♄	16 44	1 54 B	2A 27O.	0 22
	24 6 M	♀ ♄	8 28	1 0 B	32A 7 ♄	0 44 A
	25 6 M	♀ ♄	9 41	0 57 B	51A 8 ♄	0 2 A
	26 6 M	♀ ♄	10 54	0 53 B	22C 8 ♄	0 5 A
	27 6 M	♀ ♄	12 6	0 48 B	19C 9 ♄	0 43 A
<i>Febru.</i> 9	6 M	♀ ♄	27 57	0 8 B	20A 8 ♄	0 17 A
	11 6 M	♀ ♄	0 23	0 2 B	22A 6 ♄	0 26 A
	13 6 M	♀ ♄	2 46	0 4 A	26A 10 ♄	0 19 A
	18 6 M	♀ ♄	8 56	0 19 A	29A 19 ♄	0 10 B
	18 6 M	♀ ♄	13 20	0 35 A	8A 20 ♄	0 41 B
	21 6 M	♀ ♄	12 36	0 27 A	25A 20 ♄	0 49 B
		♀ ♄	13 55	9 36 A		
	22 6 M	♀ ♄	13 51	0 30 A	26M C ♄	0 6 A
<i>Mart.</i> 5	8 V	♂ ♄	5 20	2 36 B	6A 10 ♄	0 37 B
*	12 8 V	♂ ♄	8 0	2 28 B	Cum tel. cl.	0 1 1/2 A
	16 8 V	♂ ♄	9 36	2 23 B	4A 21 ♄	0 52 B
	27 8 V	♂ ♄	14 22	2 12 B	Cum 8A ♄	0 44 A
<i>April.</i> 1	4 M	♀ ♄	21 28	0 42 A	9C 27 ♄	0 33 A
					3A 26 ♄	
	18 8 V	♀ ♄	25 0	1 52 B	cum 8A ♄	0 36 B
<i>Maii</i> 3	8 V	♂ ♄	2 51	1 40 B	cum 12 ♄	0 26 B
	28 9 V	♀ ♄	8 56	1 56 B	45A 21 ♄	0 25 B
<i>Jun.</i> 12	9 V	♂ ♄	25 36	1 16 B	15C 8 ♄	0 45 B
	15 3 M	♂ ♄	3 53	1 45 A	4A 15 ♄	0 51 B
	23 9 V	♂ ♄	1 55	1 3 B	7C 15 ♄	0 55 B

# Residuum Tabulæ Præcedentis.

1677. Mensis & dies.	hora.	Plan. Loca.	Latit.	Long. a fixis.	Latitu.
Julii 6	9 V	♂ m 9 50	0 55 B	12A 28Ω	0 54 A
13	9 V	♀ m 14 7	0 51 B	5A 24Ω	0 39 A
21	9 V	♂ m 19 5	0 45 B	7C 11Ω	0 29 B
22	12p.m	♂ m 24 25	1 10 A	3C 16m	0 50 B
27	9 V	♂ m 22 50	0 41 B	16C 5m	0 2 A
Aug. 8	8 V	♂ m 0 27	0 33 B	7C 6m	0 49 A
13	12p.m	♂ m 21 27	1 12 A	4A 26Vp	0 57 A
Nov. * 7	6 V	♀ m 1 37	1 51 A	14A 3f	0 9 B
10	6 M	♀ m 9 27	2 27 B	19A 2m	0 32 B
18	6 M	♀ m 7 9	2 2 B	14A 6m	0 56 A
20	6 M	♀ m 19 41	1 49 B	50A 9m	0 32 A
21	6 M	21 2	1 43 B	31C ejusd	0 38 A
26	6 M	♀ m 28 7	1 27 B	34A	0 0
Decem. 7	8 V	♂ m 24 18	1 1 A	1C 16m	0 59 B
15	6 V	♀ m 17 23	1 51 A	5C 23Vp	0 38 B
16	6 V	♀ m 18 38	1 43 A	26A 24Vp	0 40 B
21	6 V	♀ m 24 30	1 37 A	12C 16m	0 23 E
27	6 V	♀ m 1 27	1 20 A	30C 15m	0 10

Accidit etiam hoc Anno 1677. celeberrimus raroque repetendus ♀ ii sub sole transitus, Octobris die 28. p. m. cujus phases præcipuas à nuneris meis per observationes doctissimorum Gassendi & Hevelii correctis sic investigavi.

1677. Octob. 28. p. m. Londini.

	h	'	"
Hora media surgit	2	2	50 p. m.
Eq. Temporis		15	52
Hora Apparens	2	18	45
Locus verus ☉ & ♀ m.	15	49	28

Distat

Distancia ☉ s à Terra	989603
☿ à Sole	713060
☿ à Terra	676543
☉ semid. 16'. 16". ☿ ii 8. 2	0 16 24
Angulus visæ viæ ☿ cum Eclip.	8 13 0
Angulus Incidentiæ	6 29 44
Emersionis	22 56 24
Motus ☿ à ☉ ab Incid. ad syzig.	6 18
à syzigia ad Emerf.	15 6
Motus ☿ à Sole horis quinque	29 25
Ergo tempus ab Ingress. ad sup.	2 46 24
à ☿ ad emersionem	2 34 0
Reductio 1'. 51". tempore	6 7

☿ ii ergo in solem

Centralis Ingressus	11 32 18 A.M.	Lat. ☿ 1 51 Bor.
Prox. ad cent. appr.	2 12 35	4 10 Cent. dist.
Syzigium ☉ s ☿ ☿ ii	2 18 42	4 12 $\frac{1}{2}$
Emerfio	2 52 42	6 23
Mora sub sole	5 20 24	

Sol Londini occidit hora 4 h. 32'. p. m. distante ☿ o à limbo ejus 2' fere min. egreditur enim à sole 20'. post ejus occasum.

Senior fit secundum Keplerum ☿ ad Solem Appulsus, sed maturior Authori Carolino, qui in dissertatione quadam Astronomica, idiomate scripta Anglicano, hujus congressus è suis Tabulis constituit.

	h.	'	"	Lat. ☿
Initium Octo 27 day	22	18	54	2 21 Bor.
Medium 28	0	54	17	4 33
☿ ☿ ☿ centri ☉	1	1	20	4 39
Finem	3	30	20	6 46
Moram ☿ sub Sole	5	11	26	
Centror. prox. appropinquationem				4' 36"

Differentiæ hujus inter meum & Authoris dicti calculum causa est, quod ego certiori Solis diametro, temporis, Equa-  
tione

tione demonstrativa, & orbita Terrestris prosthæresibus, paulum ab ipso diversis usus fui, an melioribus ipsa sola docebit observatio: nodi etiam orbitæ Mercurialis locum, ab Heveliana observatione promotiorem reposui, quam ipse constituerit; unde etiamsi serior mihi quam ipse fit Appulsus, minor tamen mihi prodierit & ii sub solem Incidentis latitudo, quæ, si vel nodus (quem cum Ptolomeo & ipso fixam supposui) sub fixis movetur vel maturior eveniet Mercurii ad solem applicatio, si Hevelianæ observat: ulla fides, certe minor etiam est apparitura. Sic paucis paginis celebriora anni instantis Phænomena complexus sum Appulsus tamen Lunæ ad fixas quas Keplerus in supplemento Catalogi Tychonici ipsi adiecit, consulto neglexi, quippe constat earum loca esse valde dubia & incerta forsitan & paucula alia Phænomena omiserim, impossibile enim fere est totum exhaustire Ephemeride, & inter tam multa inde depromendo nullum prætermittere, hæc tamen si Astronomiæ curiosus aliquas deinceps adinvenerit non ego illi eam invidere voluptatem oro solummodo, ut strenue seipsum utrisque iis observandis accingeret, nosque observationum faceret participes.

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I promised in my last Years Diary to give you a more correct accompt of the Motions of the two inferior as well as the superior Planets, which I have here performed as far as is requisite; for besides the Corrections of the Planets, *Saturn* and *Jupiter*, last Year, you will here find a more exact Ephemeris of the Sun from the newest, and perhaps the best Tables extant. I have proceeded here to the corrections of the Planet *Venus*, which by Observations made last Year at *Greenwich*, were found

found to dissent egregiously from the common Tables. In the latter end of *March* and *December* next you will find her place in this Diary 11, minutes differing from *Hecker's* Numbers, whether these are so much truer that the Observations that by his Sacred Majesties care and concern for the improvement of Astronomy and Navigation (will there be made) in time will evidence. And since the restitution of the places of the fixed Stars, which are the only sure foundation for all the rest, is there begun with better Instruments, than, for ought we understand, have yet been made elsewhere. I doubt not but we may after some time attain to a more accurate knowledge both of hers and the other Planets places.

I have not altered any thing in the places of the Planet *Mercury*, because that by reason of his small Elongation from the Sun he will be very seldom observable in our oblique Sphere this Year. But the mean of his access to the Sun, and Emerision from him in his transit, *October* 28. I have carefully calculated by Tables, by the Observations of *Gassendus* and *Hevelius* compared together; which rare appearance the ingenious Astronomer may observe either after the manner of the learned *Hevelius*, by receiving the Suns Species on a Scene in a dark Room, or by the help of a good Telescope, fitted with a Micrometer and Red Glasses

Glasses to save the eye with; after which way Mr. *Townley*, and Mr. *Flamsted* observed the late Solar Eclipse: for which observation and the rest, I here present them, and wish the ingenious observers Health and Serenity.

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**I** Am to desire such ingenious Persons who do make exact Observations of the Celestial Bodies, that they will please to impart them to Mr. *John Flamsted*, at his Majesties Observatory on *Greenwich-hill*, and he will acknowledge their kindness therein.

I do likewise affirm that the Quick-silver Weather-Glasses do constantly fore-shew the Weather, and that in the greatest exactness: They are made at Mr. *Tompions*, Clock-maker at the Black-Lion at *Water-lane-end* in *Fleet-street*, where may be had curious and exact Clocks, Watches, and Movements, regulated by *Pendulums* and Springs, after the newest way, and finished with his own hand, and warranted by him.

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